

**MANUFACTURERS' RECORD**

A Weekly Southern Industrial and Hardware Newspaper.

VOL. 9. No. 3.  
WEEKLY.

BALTIMORE, FEBRUARY 27, 1886.

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The cost of this Mill is much less than any other machine of sufficient capacity to do the same amount of work.

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The wear and tear of the Mill is much less than any other Quartz Mill doing the same amount of work, and the quality of the work done by it is greatly superior to work done in any other Quartz Mill now in use.

It crushes to a uniform fineness and makes no slimes, so that no sizing is required for concentration.

The Mill is equally well adapted to crushing and pulverizing of all classes of ores, either for amalgamation or concentration, and will pulverize and amalgamate from one-half to one ton per hour, according to character of ore and fineness of screens.

With ordinary care there is no loss of mercury by flouting, and consequent loss of gold, as in most other Mills where mercury is used in the Mill.

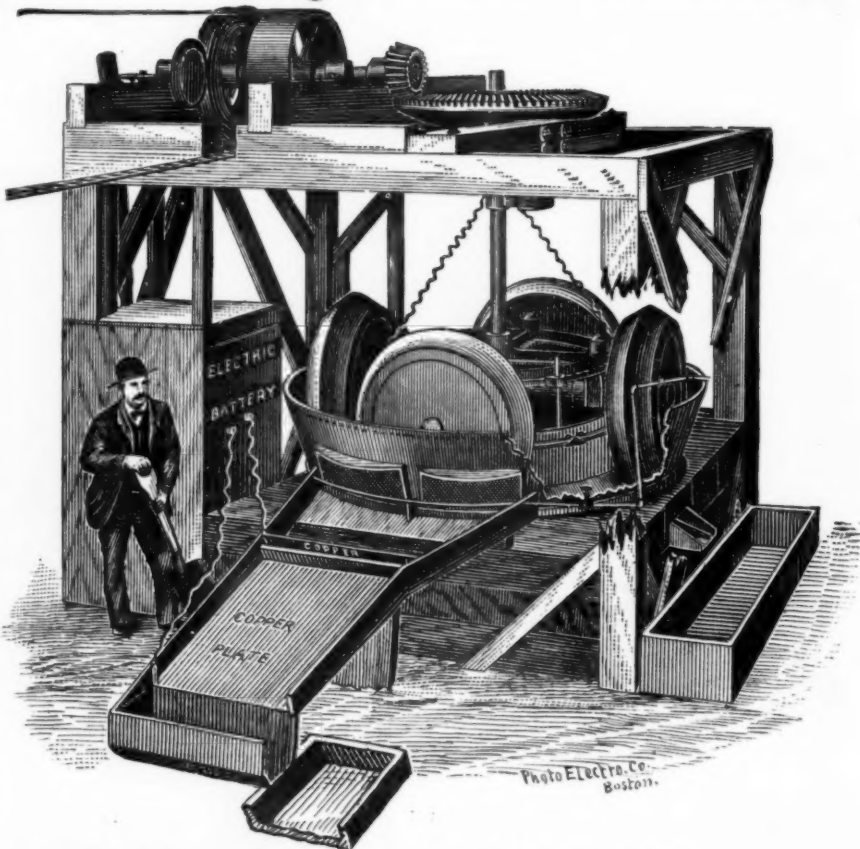
Amalgamation is carried on in the same operation with the crushing. The mercury is placed in the Mill in quantities varying from 10 to 40 pounds.

The application of electricity to the Mill for the purpose of cleaning and keeping the mercury alive has been to a very large extent superseded by the invention and introduction of the Mercury Trap in the Mill for the purpose of drawing off the mercury when charged with gold or on the slightest indication of flouting. By this ingenious device the mercury can be changed as often as desired without loss of time in either crushing or amalgamating. By opening this Trap the amalgam is discharged from the Mill in three minutes, and clean mercury introduced in its place.

To those familiar with running a Gold Mill this latter advantage will be greatly appreciated; in fact, it gives the mill-man full control of his work.

This Mill has been on exhibition at the foundry of Messrs. Bisbee & Endicott, at Chelsea, Mass., for the past 18 months, a good part of the time in active operation, and we have treated the most rebellious ores from many mining districts with most satisfactory results to the parties concerned.

The past year we have sold many Mills, which may be found in Michigan, North Carolina, Dakota, Montana, Idaho, Colorado, California, Mexico, Nova Scotia, etc. All those in operation are giving the most perfect satisfaction, as testimony will prove, and we will take pleasure in referring to any one of these on application.



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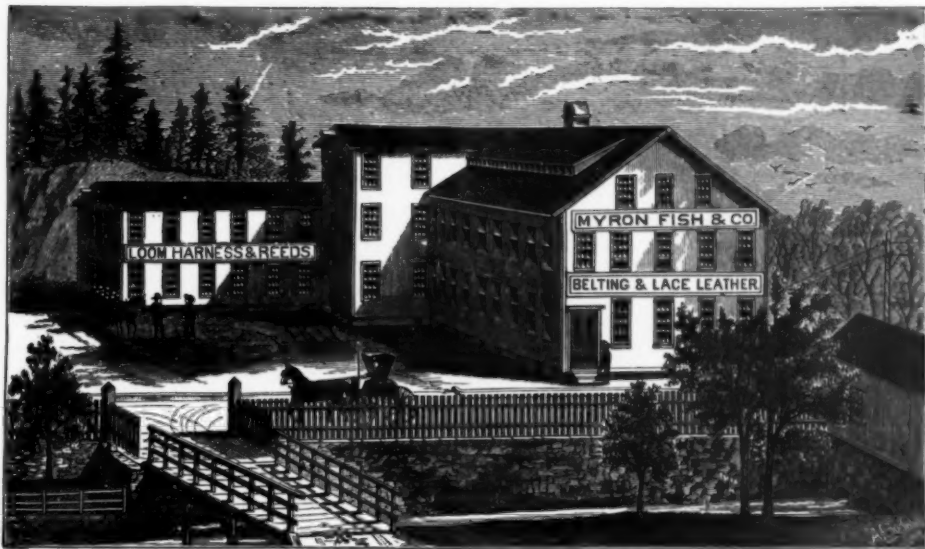
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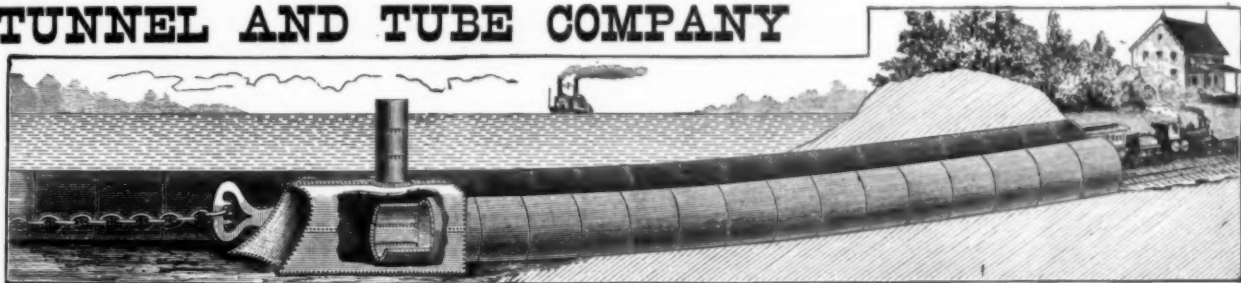
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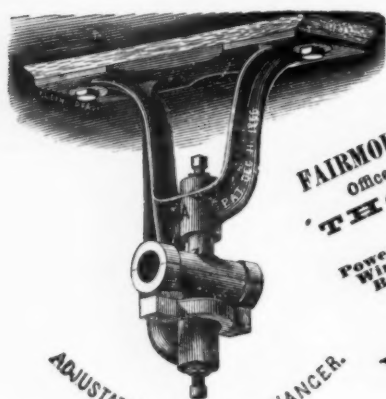
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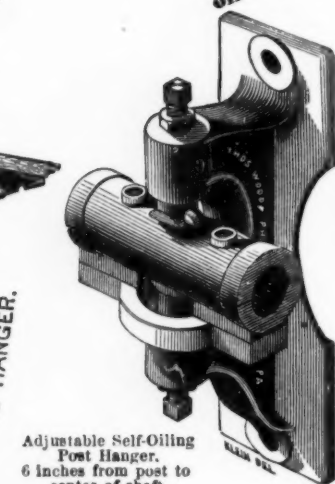
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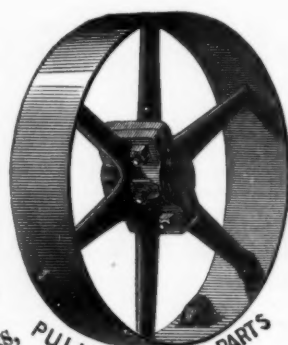




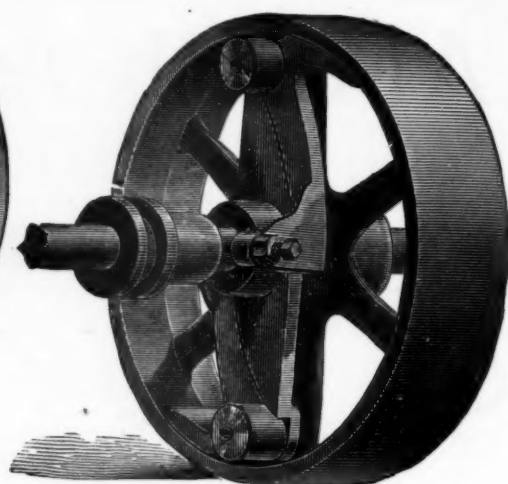
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**WARPING MILLS,**  
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WITH IMPROVED HECKS,  
**SHAFTING,**  
With Patent  
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Oil Presses for Lard, Fish and Paraffine.



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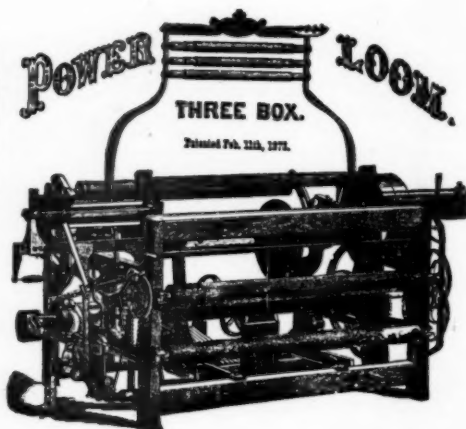
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Suitable for any kind of driving, they  
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**Special Driving,**  
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Why use old style Bearings, that require oiling  
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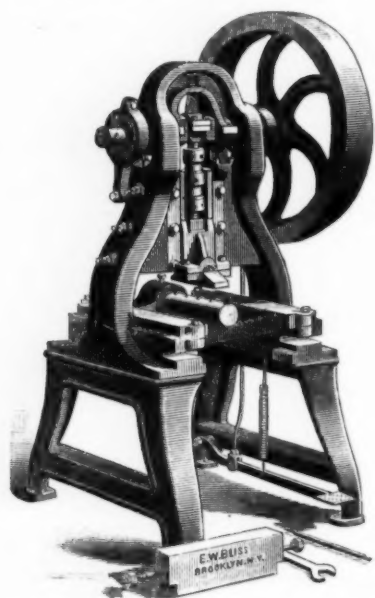
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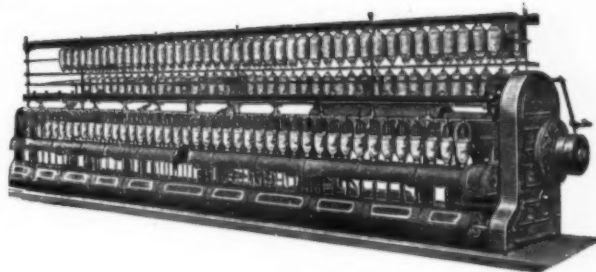
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Each mill guaranteed to give entire Satisfaction or money refunded.

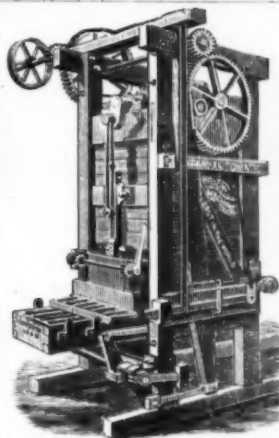
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Well Tempered Brick are the Most Reliable.

The Grand Automatic makes the best tempered Brick in the world. It is the only Machine that makes better brick in every respect than can be made by hand. Send for catalogue to

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Capacity 40,000 Perfect Brick Per Day!

Great Saving in Labor and Expense!

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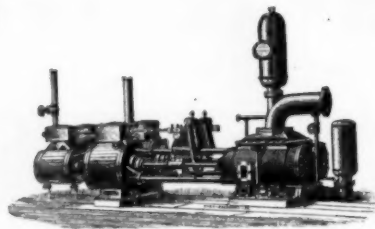
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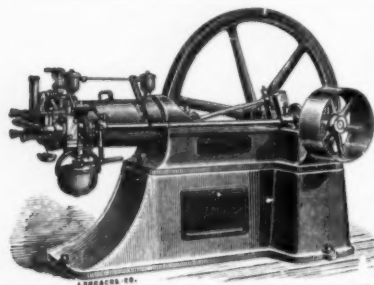
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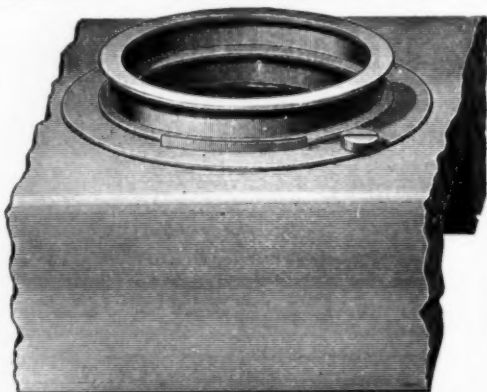
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Number of Rings sold.	Number of Rings sold for repairs.
1869... 6,025.....	
1870... 20,358.....	
1871... 38,648.....	
1872... 94,264.....	12
1873... 117,301.....	
1874... 168,382.....	500
1875... 223,924.....	963
1876... 185,319.....	947
1877... 270,811.....	946
1878... 215,214.....	3,309
1879... 336,918.....	8,207
1880... 567,860.....	11,264
1881... 659,730.....	8,974
1882... 636,715.....	22,515
1883... 416,500.....	21,689
1884... 310,869.....	25,103
1885, 9 mos. 212,056.....	22,373
Total number sold... 4,459,794	126,604
Total number in use 4,363,190.	

The great durability of our Rings is shown by the fact that we have more rings in use over twelve years old than all we have sold for repairs.

This statement shows unmistakably that a mill once supplied with our rings need think but little of the cost of repairs. As the number sold for repairs is an average of about twenty per cent. of the number sold the tenth year before, the average life of our rings will be at least twelve years.

Do not make the mistake of ordering new frames without specifying Double and Adjustable Rings. While they cost more to begin with, they are much the cheapest in the end, on account of their uniform excellent quality and unparalleled durability.

As an encouragement to use none but the best of Rings, we reduced the price on and after the first day of January, 1885, of those 1 1/2 inches or less in diameter, without holders and screws, to be used only to take the place of our rings worn out, to 12 cents each.

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**Disintegrating Machine**

The Only Method for Preparing the Ore for Amalgamation.

Disintegrating, Decomposing and Desulphurizing the ore under a HIGH TEMPERATURE and PRESSURE OF STEAM HEAT, with chemical action and attrition, dissolves and breaks up the chemical combination in the ores, individualizing, cleaning and separating the atoms of metal from the gangue, perfectly freeing them for amalgamation in combination with the MEECH AMALGAMATION MACHINE and process, (being the greatest combination of Amalgamation known,) will successfully extract 90 per cent. of the metal from rebellious ores, such as Sulphurets, Sulphides, Chlorides, Bromides, Oxides, Tellurides, &amp;c.

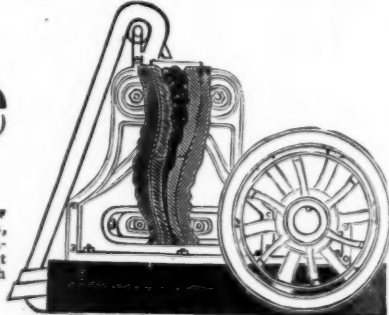
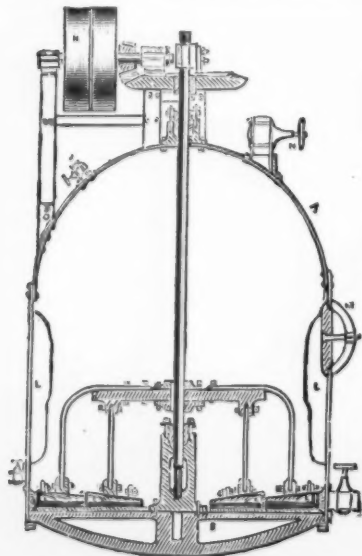
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This Machine will CRUSH AND PULVERIZE GOLD AND SILVER ORES to 20, 40, and 60 mesh fine, and from 20, 40 and 60 tons per day. The principles of this machine, making it superior to all others, are the peculiar concave and convex shape of the jaws, with concave and convex projections, which breaks, crumbles, stamps and pulverizes the ore with less power, wear and tear, than any other machine. MANUFACTURED BY

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BALTIMORE, FEBRUARY 27, 1886.

## The New Tariff Bill.

Mr. Morrison's new tariff bill is a blow at the South, whether so intended or not. It is aimed directly at the agricultural as well as the manufacturing interests of that section. For weeks we have been warning our readers of the danger of Congressional legislation inimical to the South, and have urged the necessity of some united action on the part of Southern protectionists in defence of the protective tariff. It is not yet too late to accomplish good by a tariff convention such as we have suggested, but there is no time to be lost. The new tariff bill, if successful, would inflict a death blow upon many industries in the South. It would impoverish the rice and sugar planters, and check the development of manufacturing and mining interests. A reduction of \$20,000,000 in the revenue is sought to be secured by this bill, one-half of which is to come off sugar, a Southern product. The proposed reduction on rice would ruin the rice industry. Iron ore, coal, lumber, &c., are added to the free list, thus giving the manufacturers who in the past have enjoyed the benefits of protection and profited thereby an additional advantage now in free raw materials, at the expense of the South. Just as the South is getting well started upon an era of prosperity brought about by the development of her material resources, it is proposed to rudely check this development and force the section back to its former condition of poverty. The welfare of the South more than of any other section is at stake. It is Southern interests almost wholly that would be adversely affected directly by this bill, and the people of

the South should be aroused to the necessity of doing something to protect their interests. While we do not believe that this bill in its present shape can become a law, yet, even if shorn of some of its worst features, it is fraught with danger. A tariff convention would serve to show the strength of protection sentiment in the South, and would bring together the scattered forces of protection for concerted and effective action.

This convention ought to be held at once, and steps should be taken to insure a large gathering of the rice and sugar planters, the cotton manufacturers, the iron makers, the officers of ore and coal mining companies, lumber men and others interested in this important matter. Referring to this subject, the Chattanooga Commercial says:

The MANUFACTURERS' RECORD, of Baltimore, one of the foremost industrial journals in the country, which is devoting its most energetic efforts to the work of aiding to build up Southern manufactures, a short time since suggested the holding of a Southern tariff convention, in order to show the extent of Southern antagonism to free trade, and to impress its influence on Congressional legislation. \* \* \* In response to the request of the MANUFACTURERS' RECORD for an expression of opinion from those who are in favor of a protective tariff as to the expediency of a tariff convention, and as to the most desirable point for holding it, the responses show that the suggestion is most favorably entertained, and numerous Southern cities have put in their respective claims as the most desirable for the meeting. Among others are Nashville, Montgomery, Atlanta and Birmingham. Gentlemen suggesting these and other places as desirable points for the convention also concede, however, the desirability of Chattanooga.

We are not particular as to where the convention shall be held. Baltimore has some advantages, its nearness to Washington being the most important, but Baltimore is possibly too far away from the far South. Any one of the live, progressive cities of the central South would do. It is evident from the interest taken that this convention could be made a success.

The manufacturing interests of the South are suffering from the effects of threatened legislation, and while the free traders are vigorously at work, the advocates of protection are doing but little in their own behalf.

THE Railroad Commission bill has been defeated in the Virginia legislature, and we have the satisfaction of knowing from the statements of those well able to judge that the MANUFACTURERS' RECORD was largely instrumental in accomplishing this good work. The MANUFACTURERS' RECORD is working for the good of the South, and certainly in vigorously opposing the establishment of railroad commissions, that restrict the investment of capital and make unprofitable such an extensive interest as the railroads, we are doing the best work that could be done for the prosperity of the whole South.

THE United States Agricultural Department estimates the cotton crop at about 6,500,000 bales.

## A Sugar Refinery in Florida.

A sugar refinery to cost \$100,000 is to be added to the industries of Florida. Ever since the work of reclaiming the rich land of South Florida was commenced, it has been asserted that that section would in a few years become the center of a great sugar industry. The advantages for the cultivation of cane possessed by the Kissimmee section of Florida, all things considered, are probably not surpassed by any country in the world. Now that definite arrangements have been made for engaging in this business on a large scale, its development will be closely watched, as it will not only add to the wealth of Florida, but will be a matter of interest to the entire country. The particulars of the enterprise, as given the Kissimmee Leader, are that for certain considerations Messrs. Sandys & Hansel bind themselves to erect a sugar refinery to cost not less than \$100,000, and to have it completed and ready for operation by December 1st. In consideration of the erection of such sugar refinery, the Okeechobee Land Company donates to Sandys & Hansel 1,200 acres of land, and the South Florida Railroad Company donates 560 acres—the land to be selected by Sandys & Hansel. Capt. R. E. Rose has disposed to Hamilton Disston, Philadelphia, of a half interest in his valuable property at St. Cloud, and these gentlemen are to put in 100 acres of cane. Messrs. Asbury & Klabr are also to put in another 100 acres, while various other parties near Kissimmee are to put in cane, which will swell the aggregate number of acres this year to between 600 and 1,000.

THE Baltimore MANUFACTURERS' RECORD is an interesting and vigorous journal devoted chiefly to the interests of Southern manufactures. Its chief defect is the notion that a protective tariff will aid Southern manufactures.—*New York Times.*

If a belief in a protective tariff is the only defect in the MANUFACTURERS' RECORD, we feel pretty well satisfied. That is a belief, the correctness of which we feel well assured of. It is a belief that is being widely accepted in the South, and we trust that the MANUFACTURERS' RECORD has been partly instrumental in spreading it through that section.

ONE of the growing towns of Florida is Kissimmee. It was only three or four years ago that the place where Kissimmee now stands was a wilderness. To-day it is a thriving, pushing town of about 1,000 inhabitants with every prospect that the number will be doubled in a comparatively short time. So rapid is the growth of Kissimmee that the Leader of that city states that "it is safe to assert that not less than one million dollars will be invested in various enterprises in and adjacent to Kissimmee during the year 1886."

## The Elkhorn Coal Region.

The value of the Elkhorn Coal Region, of Kentucky, from a coke-making point of view has been pretty thoroughly shown in late numbers of the MANUFACTURERS' RECORD. In discussing the same subject the Louisville Commercial says:

Only five years ago a report of the Pittsburgh Chamber of Commerce on the elements of the prosperity of that city devoted much space to "The unique coke-making regions of western Pennsylvania, a district which, like the oil regions of our State, can not find duplication in the world." At that time the Pennsylvania coke was a commercial fuel sought by iron foundries and smelters throughout this country, and the supposed monopoly in its supply encouraged Pennsylvanians to believe themselves forever safe from competition in a great source of wealth and profit. But the Connellsville coke has found a rival already in the Elkhorn region in Kentucky. The presence in the Connellsville coke of ninety per centum of fixed carbon was boasted of at length in the Pittsburgh report. Now comes a competent authority to the effect that the Kentucky coke contains "a percentage of fixed carbon somewhat more than ninety-six." This is from John J. Stevenson, Professor of Geology in the University of New York City. As for sulphur, which is undesirable in iron manufacture, the Connellsville coke nearly contains eight-tenths of one per centum, while the Elkhorn product yields less than five-eighths.

The Pittsburgh report expresses the opinion that the discovery of another deposit of coking coal identical with that of Pennsylvania "would be worth untold millions," but expresses with gratification that all efforts in this direction "have been in vain." Thanks to the Geological Survey of Kentucky, it has been developed that this State is able to discount by far the Connellsville supply of coking-coal. There can be no doubt that the grade is identically the same, and the area of the deposit is much greater in Kentucky than in Pennsylvania. This Elkhorn coal covers an area of fifty miles long, by from fifteen to twenty-five miles wide, fronts the northern face of Pine Mountain, and runs over portions of Pike, Letcher, Harlan, Leslie, Breathitt, Floyd, Knox and Perry counties. It is yet undeveloped.

The Connellsville region was opened in 1865. To-day it has nearly 13,000 coke-ovens, a capital of over \$12,000,000, gives employment to 6,500 men and produces \$6,500,000 worth of coke per annum. What has been done in Pennsylvania may be repeated in Kentucky, especially as we have here immense deposits of iron ores contiguous to the coking-coals.

THE development of the coal mining interests of Virginia during the last two years, so often set forth in the MANUFACTURERS' RECORD, is summed up in a Philadelphia dispatch to the Baltimore American, which says:

"The growth of the new Pocahontas soft coal production in Virginia has been so rapid as to surprise the soft coal interests. This production in two years has been what it took the Clearfield region twelve years and the Baltimore & Ohio thirty-five years to accomplish. The shipments are made over the Norfolk & Western Railroad to Norfolk. In 1884 the production of the mines was 195,587 tons, and in 1885 it was 580,047 tons. The output of these coals in 1886 will very probably reach 800,000 tons. The coals have also proved so good as to be considered one of the leading factors in the formation of the soft coal pool."



### Coal Production in the South.

The vast coal wealth of the South is now being rapidly opened up and the annual output is steadily increasing. Coal mining is becoming one of the most important industries of the South, and is yearly adding very largely to the prosperity of that section. Notwithstanding the fact that the total production of bituminous coal in the United States in 1885 was 3,000,000 tons less than in 1884, in the South there was a large increase, amounting to over 1,000,000 tons. Some time ago we gave the statistics of the amount of coal mined in the South for several years, and as Bradstreets has compiled the total output for the United States in 1885, we are able to gather from that the production in the South in that year, and to compare it with the record of former years, which gives the following:

States.	1870. Tons.	1880. Tons.	1884. Tons.	1885. Tons.
Maryland....	2,342,153	2,228,017	2,469,051	2,866,000
Virginia....	61,893	45,896	300,000	630,000
W. Virginia.	608,878	1,839,845	3,000,000	3,250,000
Georgia....	.....	154,644	200,000	170,000
Alabama....	11,000	323,972	2,000,000	2,225,000
Tennessee..	133,418	495,131	1,200,000	1,100,000
Kentucky..	32,038	946,288	1,550,000	1,600,000
Texas.....	.....	14,778	125,000	125,000

Total... 3,192,290 6,048,571 10,844,051 11,966,000

These figures show that in coal mining, as in all other industrial interests, progress is the order of the day in the South. An increase in the coal output of 1,100,000 tons in 1885, compared with 1884, is very gratifying, and especially so when it is remembered that the decrease in the United States, outside of the South, during the same time was over 4,000,000 tons. The largest proportionate increase in 1885 over 1884 was in Virginia, where the gain was over 100 per cent., and the highest output was 3,250,000 tons, in West Virginia.

The coal area of Great Britain is 11,900 square miles, while West Virginia alone has 16,000 square miles of coal fields, Alabama 10,680 square miles, Kentucky 12,871, Tennessee 5,100, Arkansas over 9,000, and Texas estimated at over 30,000 square miles. The wealth of the South in her coal resources is beyond calculation.

The Baltimore MANUFACTURERS' RECORD is doing good work for the industries of the Southern States. Its last number contains a review of the year's progress in manufactures made by the South, and the exhibit is enough to surprise one who has not kept track of the industrial growth of that section. Flour mills are by no means the smallest item in the record of the South's industrial growth. In every State new and improved flour mills have been erected; and we have no doubt that in a few years the South will cease to be a market for Northern flour.—American Miller.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more.

### Our Birmingham Letter.

#### The Morrison Tariff Bill—The Internal Revenue System—Some Sound Views Vigorously Expressed.

[Special correspondence MANUFACTURERS' RECORD.]  
BIRMINGHAM, ALA., Feb. 22, 1886.

What was written last week concerning the condition of the Birmingham iron interest will serve quite as well for this. Quotations and production are without change, and everything is quite as busy as at any time in the past. Perhaps one might say a little livelier in one direction, since there has been a most undoubted scramble lately to secure control of the moderate amount of iron-ore land yet in the market that happens to be situated upon, or conveniently to, railway lines. Probably our Eastern and Northern friends imagine that we have a vast area of ore territory here, and so we have, after a fashion; but on the other hand, people who are familiar with the details of operations in mineral countries will understand without much difficulty how individuals and corporations with means, knowledge and opportunity would be likely to occupy strategic points and enough of the body and bones to place themselves in a comfortable position in respect of the future. Not but that there are iron and coal properties yet to be had for money, but at the present rate of absorption the same may not be truthfully said of iron land at least by the end of the spring. As I was remarking, there has been a scramble between the insiders and the outsiders for a couple of weeks, and both armies have taken some prisoners, so to speak.

The "outsiders" have been stirred up to action very likely by the report that Gen. Thomas, of Pennsylvania, had determined to erect a considerable iron plant at Birmingham in connection with his large iron and coal land interests. This determination seems to have led his home rivals to the suspicion that if Gen. Thomas felt compelled to go to Birmingham, it might be well for the rest to see what the chances for like movements would be. Representatives of several powerful Eastern syndicates have been looking about during the past ten days, and furnace sites with lands to correspond have been freely and openly enquired for. But limited results have followed the enquiry. There are but two really gilt-edged ore properties on the market, and one of these is held too high for present negotiation, although doubtless worth the price asked. As for the other, it is probably as good as gone by this time, as several interests were bidding against each other for it last week. Some extremely desirable iron land is offered in the Anniston district, and there are large bodies of brown hematite lands that must come in for development by and by; but looking at the situation all around, the man who wants to get his share of the red hematite ores adjacent to Birmingham will do well to wire somebody here to take it into camp for him without farther delay.

If it was Mr. Morrison's intention to thoroughly and eternally antagonize the industrial interests of the South, he could not have selected a shorter or a cleaner cut to that end than he has adopted in his bill for the revision of the national customs tariff. I am writing this on Washington's birthday, a day quite appropriate to the consideration of such a topic, because the Father of his Country had strong and sensible views on the tariff, and in his farewell address expressed himself in that connection in a way that ought to make Mr. Morrison and his British coparceners in this deliberate scheme to demolish American industries feel a trifle ashamed of themselves. General Washington said: "Against the insidious wiles of foreign influence I conjure you to believe me, fellow-citizens, the jealousy of a free

people ought to be constantly awake, since history and experience prove that foreign influence is one of the most baneful foes of republican government."

Wherever there is in the New South a spindle, loom, forge or factory of any sort, there are curses long and deep sounding today upon Morrison and his ilk. What his bill would result in to the iron ore producing interests of the United States if it became a law the MANUFACTURERS' RECORD has shewn heretofore. Success in Congress means nothing less than the closing of the iron mines of Connecticut, New York, New Jersey, the impoverishment of the Lake Superior iron region, and the relegation of the Virginia iron deposits to idleness for years to come. It means taking the bread from the mouths of thousands of American miners, that the soulless traffickers in the pauper labor mines of Spain, Africa and the West Indies, and the equally venal manufacturers of Eastern Pennsylvania, may make some additional profit. It is not from any fear of local consequences that the iron-men of this district are prepared to fight the free-ore provision of the Morrison bill. It is on the general principle that all American industries are entitled to protection against foreign competition, and if raw materials are not so protected, the manufacturers who are not free traders beyond that point, but who want the amplest protection for "finished products," will find themselves assailed by a solid South demanding absolute and unrestricted free trade. The important segment of the Southern people interested in productive industries are not quite fools enough to allow the East to maintain a high tariff on a selected lot of commodities and a low tariff on a certain other lot, to the injury of the young native industries of our section.

It is something like this that the free traders counted on. When they discovered the opportunity, in the new Southern iron competition at the East, to tempt Eastern iron and steel producers to ask for "free raw materials," they knew far better than their selfish victims that such a course on the part of even the smallest portion of the manufacturing interest must inevitably lead to reprisals, and that once the first breach in the solid wall of Protection was effected, the winds and waves of divergent and antagonistic interests could be quite depended upon to soon sweep away the whole structure. They will surely win in case the free raw material principle is adopted by the Congress. The grasping monopolists who are genially willing to decree idleness, misery and disaster to miners and lumbermen, and the people who employ that labor, in order to cheapen their own production a little, will experience a speedy taste of what it is to reap the whirlwind.

There will be a fight first, as a matter of course! The South is hardly liable to stand idly by and see its coals shut out of its own seaports by pauper labor coals from Nova Scotia and England, or its pine lumber embargoed in the market of Chicago by the cheap free lumber of Canada, or its sugar industry ruined for the enrichment of Claus Spreckles and his friend, the King of the Cannibal Islands! Yes, there is going to be a row, and one in which more than a little presidential timber will be shivered into matchwood too small to mention. Mr. Morrison is credited with having erected a small lightning rod of a hopeful character. It will be struck in a way different to his desires. But if the fight go against us, the occasion will be one upon which to look out for snakes. The minute raw materials are placed on the free list, that minute the South goes for free trade.

Such a prospect is calculated to make the pro-British party redouble its efforts, but

meantime there is something else in the wind that will tend to keep them busy. The friends of American industry and labor are growing wretchedly tired of the merely defensive policy they have adhered to all along. They begin to realize that the one thing to do in the present juncture is to slaughter that which stands in the way of our chance to obtain justice to native capital, enterprise and labor. That obstruction is the accursed internal revenue system. Why so little has been said on this matter in Congress is not hard to understand. A leading Southern manufacturer recently asked a prominent Protectionist in the House of Representatives why the friends of the American system did not make a general and determined demonstration against this tyrannical and corrupt feature of our national administration? He was answered that the internal revenue organization constituted and controlled such a vast force of political and financial power and corruption that no politician had the courage, even if he had the disposition, to attack it.

Whatever fears the politicians may feel on this score, they are not necessarily shared by the farmers and the common people generally. It was \$105,000,000 that the whisky and tobacco monopolists forced the people to pay last year, (I think these figures are correct), that a limited number of large companies might be guaranteed huge profits on a business which the poor are forbidden by law to conduct. It only needs that the agricultural and labor classes of this nation should come to a clear understanding of the oppression, to bring them around the heads of corrupt British-bought Congressmen like a flock of furies! The convenient euphemism that the drinkers and smokers pay all these taxes, and that they do not come out of the pockets of the people generally, has grown quite too ragged to wash any more. In the first place, Southern farmers see well enough that crops which can only be turned into spirits at a profit, and which only the licensed partners of the Federal Government are permitted to manufacture into spirits, are entirely at the mercy of the latter. The farmer must take what the whisky monopolist is willing to pay or lose his grain or his fruit. Moreover, to hold that the economic relations of the people to whisky and tobacco end with the price paid by the ultimate consumer is the most puerile nonsense. The same ultimate consumer—the man who drinks the liquor or uses the tobacco—is a producer of or dealer in some other commodity, and, as his luxuries are "expenses," he naturally endeavors to tax them back upon the community. Some of the extravagant tribute he pays to the whisky monopoly is added to the price of the dry goods, the groceries, the shoes or shovels that he sells to the farmer, and, in short, it does not require elaborate argument to shew that the excessive profit of any one interest becomes a general tax upon the prosperity of a community, whether that profit be upon articles of necessity like sewing machines, or articles of luxury like cigars and whisky. Once awake to this consideration, and to the equally important one that but for the un-Democratic, un-American, oppressive and unspeakably corrupt internal revenue system, American industrial capital, enterprise and labor would be sure of reasonable protection for years to come, the agricultural and working people of the United States will make themselves heard and felt in a way that cannot be mistaken. The President may be able to ignore in his messages the greatest curse and disgrace of our government, but the people do not forget its existence, nor will they fail to demand its extermination. Whatever may be the fate of the tariff, the internal revenue system must go.

G. B. WEST.

In enterprise the MANUFACTURERS' RECORD has been most conspicuous, and the high place it has won is a position well earned.—The South, New York,



## MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

### QUEEN OF ROWAN.

This is the name of a new—1886—discovery in the eastern part of Rowan county. The property consists of 120 acres of land, situated in the vein-producing portion of the county. The vein where cut is 18 inches wide and is traceable for several hundred yards. The ore is a bright, rich-looking ferruginous quartz, carrying free gold in quantities often visible to the natural eye and a small percentage of sulphurets. Some developing work is being carried on, and it is quite probable that machinery will go up at this locality during this year. Messrs. S. R. Harrison, S. C. Miller and Geo. Smith, of Salisbury, have control of the property.

### THE HERRING MINE,

mentioned some time ago, is worthy of further notice, introducing facts not before mentioned. The property is situated in the county of Randolph. It has never been worked on any intelligent mining plan, but by inexperienced and reckless men who have sought out and removed the richest parts of the pay ore. The place now presents a rugged appearance—a lot of holes, open cuts, dumps of low grade ore and dirt. The ore as a rule is of low grade, yet of sufficient value to pay for legitimate, careful work. The difficulty with the Herring company has been that they have never had an intelligent superintendent—i. e., one who understood the treatment of ore or of economical mining. Some \$40,000 have been expended in machinery and on a railroad scheme to or near the property, and this before a proper investigation of the property was made. The usual failure came, of course, and the mine was condemned as a failure before it had been opened. No mine will bear such a strain as that, yet many North Carolina properties have been and are now being subjected to just such wild-cat management. They fail, of course. Mr. A. B. Trippler, the inventor of the "Trippler Amalgamator," went there a short time ago to test his device. He has sunk a small prospecting shaft to the depth of 35 feet, and he has carefully tested the ore as he went down, finding that it improved as depth was attained. At the bottom of this shaft he has started an 8-foot drift on a good body of ore. He ran 10 tons of this ore through his amalgamator and cleared up 27 pennyweights of gold, 9.20 fine. This ore is low grade; will assay about \$2.60 to the ton. It cost 80 cents to the ton to work it, which cost can be reduced where proper hoisting machinery is employed. This is a practical demonstration that the lowest grades of ore may be worked with a profit in North Carolina, and is valuable in that sense.

### THE RUSSELL GOLD MINE.

The company are pushing the work at the Russell. One hundred men are employed in mining and milling operations alone. The main ore body is practically inexhaustible, but new and rich parallel lodes are being opened which promise big things for the future of the property. The ore is practically free milling and is worth from \$4 to \$10 to the ton, and often running much higher in value, but it is average material that is spoken of. Should the company carry into execution their present contemplated plan of adding 80 stamps to the mill, it would probably make the Russell's output reach a quarter of a million annually.

### SHUFORD GOLD MINE.

The Shuford Gold Mine, in Catawba county, is likely to become active again. Superintendent Hyser has just returned from a trip North and has gone to the mine. His first work will be the shipping of the old hydraulic machinery formerly used back North, where it was sold for a fair price. He will then continue prospecting for veins.

The property was worked for a long time with profit as a placer, but the pond has filled up from the settlements of the often used water and the supply has been lost. The indications point to veins rich in precious metal, and it is for these that search is to be made. The hill has been much worked in a petty way—"gophered," the miners call it—for a long time. The small pits were made in following rich seams of quartz. These holes or shafts are from 3 to 40 feet in depth, but are not protected by the usual timbering. Mr. Hyser is also interested in a valuable property adjoining Hoover Hill, in Randolph county, which will probably be opened this spring or summer.

A new 10-stamp mill has been set up and put to work on a mine near Asheborough, N. C., by Messrs. Horne & Bartrum.

### The Beaudry Upright Cushioned Power Hammer.

We are glad to be able to present an illustration of this machine with its latest improvements, believing it will be especially useful in the South, where labor-saving machinery of all kinds is coming rapidly into use. In a general way, we would state that the hammer is upright in form, and is constructed entirely of iron or steel, with bronze

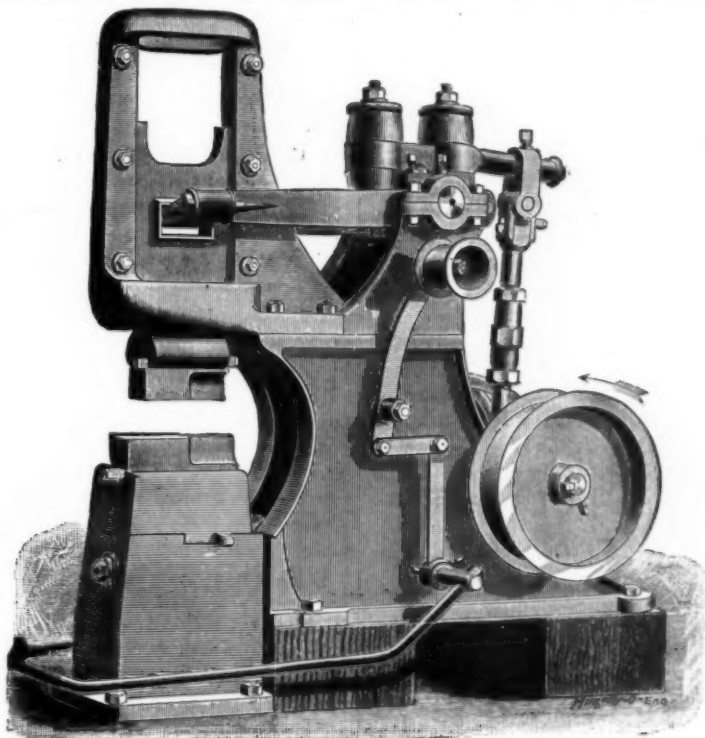
apparent, as the machine is free from any springs or other delicate furniture liable to fracture, which must reduce the cost of subsequent repairs to a minimum.

Points particularly claimed for this hammer are accuracy, force and elasticity of blow, ease and simplicity of adjustment, range of work, and durability and economy of power. It is adapted for die work, all kinds of forging in general, job and railway shops, and for carriage, cutlery, spindle, and general and special tool work.

Further particulars may be had of Messrs. Beaudry & Cunningham, Boston, Mass.

### A Gigantic Operation.

One of the greatest railroad movements ever known will take place on the first day of June when the gauge of the Southern roads will be changed to a size to correspond with the Northern or standard gauge. The Southern gauge has for many years past been a source of endless expense and inconvenience to all the railroad south of the Ohio and Potomac rivers, and while the advantages of a uniform gauge have long been seen, its adoption has now come to be an imperative necessity. The time has at last arrived for the Southern roads to correct the unfortunate mistake made when the five-foot gauge was adopted, and when the change has been



THE BEAUDRY UPRIGHT CUSHIONED POWER HAMMER.

or other anti-friction metal on all important bearings. By means of a duplex helve, two arms made from nicely tempered steel, the hammer ram is lifted in ways or guides much the same as in the forged drop. The steel arms of the duplex helve spring with each stroke, so that the machine is relieved from sudden strains. This, with the elasticity imparted by the lifting belt and rubber springs, renders the blow exactly like that given by the blacksmith's hand hammer—elastic, but not crushing. For this reason no jar is perceptible in the working parts when the blow is struck. The stroke is directed by the foot of the operator from any of the three working sides of the hammer.

The entire machine is so simple in construction and manner of adjustment that it can be operated to its full capacity at once. The hammer may be quickly adjusted for special dies, and while running at full speed the stroke may be instantly regulated. When at rest the dies always stand apart, and the opening or distance between the dies may be instantly varied to suit the work at hand. The whole aim and design seems to have been to produce a hammer which will do the most work of a superior kind with the least expenditure of power and with the least expense for repairs. This last feature is quite

accomplished all of the important railroads in the United States will correspond sufficiently in gauge to have the running gear throughout the country alike and transferable in every State.

A meeting of the representatives of the several Southern roads interested in the change of gauge was held in Atlanta on February 2, and all the details of the change were arranged. It was decided that Monday, May 31, and Tuesday, June 1, be set apart for the work, and that a uniform gauge of 4 feet 9 inches be adopted in lieu of the standard gauge which is 4 feet 8½ inches. The 4 foot 9 inch gauge is considered more convenient, and, as a certain amount of lateral play is allowed on all tracks, it is sufficiently near the Northern gauge to permit of a uniform wheel gauge all over the country.

It is said that many of the railroad companies, seeing that the change must have come eventually, commenced to prepare for it as early as three years ago, and such is the power of organized labor and the demands of business that nearly 13,000 miles of railroad will be changed to the uniform gauge inside of about twelve hours and without interruption in the running of many of the important trains even on the day that the change takes place.

The change of gauge will take place on almost every railroad south of the Ohio and Potomac Rivers, extending over about 13,128 miles of railway, made up as follows: South Carolina 1,320 miles, North Carolina 960, Georgia 2,413, Florida 1,250, Alabama 1,803, Mississippi 776, Louisiana 313, Kentucky 1,118, Tennessee 1,886, and Virginia 981 miles. All of the roads in South Carolina will be changed.

The following lines will change on May 31: Louisville & Nashville, Nashville, Chattanooga & St. Louis, Memphis & Charleston, Alabama Great Southern, Cincinnati Southern Railway, Cincinnati, Selma and Mobile, Montgomery & Eufaula, South-western of Georgia, Pensacola & Atlanta, Florida Railway & Navigation Company. All other main lines will change on June 1.

The work to be done on the day of the change will be expedited in a great measure by doing as much of it as possible previous to the day of change, and the preparations for it will commence as early as April 1 on some of the roads.

The changing of the gauge of the track from five feet to four feet nine inches will be done by moving one rail in three inches without disturbing the other rail at all. The preparations for changing the road bed will be commenced about one month ahead. This preparation will consist in adzing or cutting the tie to a smooth and even surface with the base of the rail and clearing away any obstructions even with the top of the tie for a space of not less than five inches from the rail that is to be moved in, so that when the change is made the bearing of the track will not be destroyed. All spikes not absolutely necessary will be drawn out beforehand. The rail is fastened to each cross-tie by two spikes, one on the inside and the other on the outside. All inside spikes will be drawn except the spikes in every third cross-tie on tangents and every other tie on curves.

By means of a template to measure the distance that the rail is to be moved a great deal of valuable time can also be saved by driving the inside spikes beforehand. Inside spikes will be set with templates in every third tie, and will project sufficiently above the surface of the tie to receive the base of the rail. When the change actually takes place, therefore, all that will be necessary to be done will be to draw the few inside spikes that have been left to keep the rail in position, shove the base of the rail under the spikes that have already been driven on the inside of the new gauge, and then secure it by driving in the outside spikes, leaving the old outside spikes to be drawn at leisure. This arrangement will also save the necessity for measuring the gauge and arranging the bearing on the day of the change.

All roadway forces will be increased to at least double the ordinary number, and on the day of change there will be at least three men assigned to each mile of rail. The work will be done between 3.30 A. M. and 4 P. M., during which time the running of all trains will have to be suspended. After 4 o'clock, however, the running of the trains will be resumed. The change of gauge will, of course, necessitate a complete change in the running gear of the rolling stock, and this will be almost as big a job as the alteration of the track. The greater part of this work, however, can be done before the day of the change, and, indeed, many of the cars and locomotives are now being prepared for it. Those that are not in use are now being changed, while with those that are in service the axles are being turned to fit the wheels, so that they will only have to be pressed in for use on the new gauge.

A great many of the roads have delayed getting new locomotives until the change is made, and they have been ordered to suit the new gauge. This is especially the case with the South Carolina Railway Company, which will replace a great many of its locomotives with new ones. Even with the locomotives now in service there will not be any great difficulty in making the change. All of those that have been purchased during the past three years have been made with the tires of the driving-wheels separate from the main portion of the wheels, and all that will be necessary will be to press them in a little on each side.

The change of gauge will, of course, necessitate the expenditure of a vast amount of money, but this will be compensated for many times over by the immense advantages which will accrue from the adoption of a uniform gauge throughout the entire country. —Charleston News.



# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

## ALABAMA.

It is reported that the Pratt Coal & Iron Co., Birmingham, Ala., will build 300 new coke ovens.

E. G. Stephens and W. B. Elliott have asked for permit to establish gas works at Birmingham, Ala.

A. L. Tyler, Samuel Noble, J. W. Noble and William Noble have incorporated at Anniston, Ala., the Anniston Street Railway Co.; capital stock \$20,000.

Noble K. Meed, of Cincinnati, is in Birmingham, Ala., prospecting with a view to building a saw mill at or near there.

T. O. Burwell, S. R. Truss, F. O. Sherrod, D. T. Brown and others have formed a compress company at Birmingham, Ala. A Curry compress has been purchased and will be erected by next August.

It is rumored that H. F. De Bardeleben, Birmingham, Ala., has closed negotiations with English capitalists for the development of his iron ore property near Jonesboro, and that a furnace will be built.

J. A. Van Hoose, Joseph R. Smith, Sr., H. F. De Bardeleben, A. Marre, William Berney and W. A. Walker, Jr. have incorporated at Birmingham, Ala., the Birmingham & Pratt Mines Street Railway Co., capital stock \$100,000.

L. D. Carroll is erecting pressed brick works at Pratt Mines, Ala., with a daily capacity of 20,000 bricks.

New machinery will be added to the saw mill of Smith & Marbury, Bozeman, Ala., to increase its capacity from 60 to 100 M feet per day.

The Pratt Saw Mill Co., Verbena, Ala., will make extensive repairs to their mills.

## FLORIDA.

The Green Cove Springs Water Co. has been formed at Green Cove Springs, Fla., to establish water works. The company contemplate building gas works.

Sandys & Hansel will erect the sugar refinery at Kissimmee, Fla., reported last week. It will cost not less than \$100,000 and have a daily capacity of 5 tons. About 600 or 700 acres of land near there will be planted in sugar cane this year.

Kornahrens & Wedding, Jacksonville, Fla., have put \$2,000 worth of new machinery in their bottling establishment.

Hood & Weston are erecting a saw and planing mill at Blue Springs, Fla. The daily capacity will be 8,000 feet.

The Ocala Fertilizer Co., capital stock \$50,000, has been formed at Ocala, Fla.

George M. Hastings, Lott Allen, H. K. Newbert, B. Gillett and Geo. Berkelman have incorporated in Florida, the Interlachen, Jacksonville & Ocala Air Line Railroad Co., to build a road about 100 miles long.

A 50-horse-power saw mill is being erected at Sweet Water station, Fla.

## GEORGIA.

W. P. Bussey & Co. have ordered machinery for a grist mill, which they will add to their planing mill at Barnesville, Ga.

Mr. Albertson has added some new machinery to his saw and planing mill at Braganza, Ga.

Moore & Valentino are enlarging their works at Brunswick, Ga., and putting in machinery to double their present capacity.

Gibbons & Flowers will organize a stock company at Rome, Ga., to manufacture a patent harrow and pulverizer. The capital will probably be \$15,000.

L. Noizet and Peter S. Van Houten, Atlanta, Ga., will establish a foundry and machine shop.

The Mutual Gas Light Co., Augusta, Ga., have made application for a charter.

## KENTUCKY.

Weir, Brown & Co. have recently started a tobacco factory at Hanson, Ky.

John Seiler has erected a grist and malt mill at his brewery at Covington, Ky.

John E. Cartwright, N. S. Hoff, Thomas J. Jones, Ernest Rehm, Charles Stahlberg, P. Burton Warner and John C. Yorsen have incorporated at Covington, Ky., the United Clock Co., capital stock \$250,000, to manufacture clocks and other articles.

A bill has been introduced in the Kentucky legislature to incorporate the Kentucky Wagon Manufacturing Co., of Louisville.

## LOUISIANA.

The Consumers Ice Co., capital stock \$150,000, has been chartered at New Orleans, La., to manufacture ice, by N. D. Wallace, R. B. Lawrence, W. J. Behan, Frank Roder and Herman Zuberbieber. N. D. Wallace is president of the company.

The Pelican Insurance Co., New Orleans, La., will erect a \$15,000 building on Magazine street, and the Southern University will erect a \$26,000 building on same street.

A stock company is being organized at Monroe, La., to build a cotton compress. D. M. Sholars or T. N. Conner can give particulars.

Madison Parish, La., is advertising for plans for a \$7,000 jail, to be erected at Tallulah.

A. G. Riley, representing the Thompson-Houston Electric Light Co., is negotiating for the erection of a plant at Baton Rouge, La.

## MARYLAND.

Samuel C. Rowland will rebuild his planing mill at Port Deposit, Md., reported last week as wrecked by the flood.

A bill has been introduced in the United States Senate to incorporate the Union Passenger Railway Co., of Washington, D. C., with E. N. Gray, Garrick Mallery, W. H. Moore, W. F. Sadler and W. W. Tivins as incorporators. The capital stock is to be not less than \$100,000.

The Cumberland Oil & Natural Gas Co. has been incorporated at Cumberland, Md., to bore for oil and gas.

Mr. Strong will erect a \$150,000 house at Washington, D. C., and John M. Carson will erect a \$15,000 house.

A bill has been introduced in the Maryland legislature to incorporate the Maryland Butchers' Abattoir & Live Stock Co.

## MISSISSIPPI.

The Natchez Compress & Warehouse Co., Natchez, Miss., previously reported, have ordered a 90-inch Morse Compress.

A. G. Riley, representing the Thompson-Houston Electric Light Co., is working up the organization of a company to establish a plant at Natchez, Miss.

A stock company is being organized at Meridian, Miss., which will build a \$35,000 opera house.

The Mattingly Milling Co., Vicksburg, Miss., are preparing to enlarge the capacity of their mill to 450 barrels per day.

The building of a creamery is being agitated at Meridian, Miss.

## NORTH CAROLINA.

A. A. Springs, Winston, N. C., has leased the old Pogue Factory at Hillsborough, N. C., and will use it for the manufacturing of plug tobacco.

A stamp mill, using a 25 horse-power engine, has been erected at the Horne & Bartrum Gold Mine, near Asheboro, N. C.

Elias W. Cox and John T. Edmundson contemplate erecting an ice factory at Goldsboro, N. C.

Jennings & Hay will begin the manufacture of tobacco at Winston, N. C. The factory formerly occupied by H. H. Reynolds will be used.

John Straith has erected machinery at Asheville, N. C., for manufacturing brooms and brushes.

Quinn, Dalton & Brown, of Waco, N. C., have purchased a saw mill and shingle machinery, which they will erect near Rutherfordton.

S. C. Miller and others have opened and will develop a gold mine 8 miles from Salisbury, N. C.

J. C. Brewster, Raleigh, N. C., has made a proposition to Goldsboro, N. C., to build the water works previously reported, for \$35,000.

G. W. Peeler & Co. are preparing to open a gold mine 4 miles from Gold Hill, N. C.

The Pioneer Manufacturing Co., Raleigh, N. C., are putting in bobbin and spool machinery.

Kugler & Son, it is stated, will erect a large saw mill at Smith's Creek, N. C.

The Odell Manufacturing Co., Concord, N. C., previously reported as adding 40 looms to their plant, have doubled the capacity of their dye house and contemplate refitting their old mill with new machinery.

Dolphus Bearnhardt and Newton Rogers are erecting a steam saw mill at China Grove, N. C.

## SOUTH CAROLINA.

The Newberry Cotton Mills, Newberry, S. C., R. L. McCaughren, president, will probably put in additional machinery this spring to fill their mill.

## TENNESSEE.

J. W. Peck is erecting a tannery at Mossy Creek, Tenn.

The Columbia, Tenn., Hosiery Co. and the Dyas Knitting Co., Nashville, will organize a new hosiery company at Nashville. The machinery of the Columbia Hosiery Co. is being put in the works of the Dyas Knitting Co.

A \$100,000 stock company has, it is reported, been organized to furnish natural gas for heating and manufacturing purposes at Nashville, Tenn.

A. D. Reynolds, T. H. Hendricks, W. Frizzell, M. M. Butler and Charles E. Finch will charter at Bristol, Tenn., the Bristol Slate Co., to develop quarries on the Holston river, in Washington county, Va.

Charles S. Shook will erect a marble factory at Chattanooga, Tenn. Machinery is now being purchased.

Lewis & Miller, Cleveland, Tenn., have recently moved their chair factory to another site and have doubled its capacity.

The Belt Railway, at Chattanooga, Tenn., will be extended several miles.

The Chattanooga Foundry & Pipe Works, previously reported as enlarging their works, will build a three-story machine shop and pattern house, 40x125 feet.

William Rose, Chattanooga, Tenn., will rebuild his cooperage works, reported in this issue as burned.

H. E. Conant, Spring City, Tenn., will erect a saw and grist mill at Sheffield, Tenn.

C. O. Page, T. A. Atchinson, E. B. Stahlman, W. H. Jackson, A. W. Harris, H. B. Grubbs and J. S. Frazier have incorporated at Nashville, Tenn., the Capitol Canning Co., capital stock \$50,000. The machinery of C. O. Page, Madison, Ind., will be moved to Nashville and re-erected.

## TEXAS.

H. M. Hoxie, William Kerrigan, G. C. Smith and E. G. Merriam, of St. Louis, and others, have incorporated in Texas the Dallas & Greenville Railroad Co., capital stock \$800,000.

J. H. Britton has received the contract for building the court house and jail at Marfa, Texas, previously reported, at \$60,000.

The Jenny Electric Light Co. have commenced work on the plant for Waco, Texas, previously reported.

A company to manufacture barrels and staves is being organized at Paris, Texas.

The Electric Light Co., at Austin, Texas, are adding new machinery to their plant.

J. D. Hellams and Mr. Fisher will place roller machinery in their flour mill at Hico, Texas.

D. M. Angle, G. W. Angle, H. G. Stryker and Nelson Stryker have incorporated at Houston, Texas, the Angle Lumber Co., capital stock \$50,000.

Sam Allen, T. W. House, G. C. Street and J. A. Baker, Jr., have incorporated the Texas Rolling Mills, capital stock \$50,000, at Houston, Texas.

The \$15,000 roller flour mill reported last week as to be built by the Farmers' Alliance of Montague, Texas, will be erected by the Mantague County Alliance Milling Co. R. Lamb, Bowie, can give information.

The Knights of Labor and the Farmers' Alliances at and near Terrell, Texas, will hold a meeting for the purpose of organizing a co-operative stock company to build a flour mill and cotton-seed oil mill.

Proposals will be received for building a court house at Henrietta, Texas, to cost about \$58,000.

A stock company is being formed at Austin, Texas, to manufacture fire brick and sewer pipe.

A \$25,000 court house will be erected at Rio Grande City, Tex.

The Eureka Manufacturing Co., capital stock \$30,000, has been incorporated at Palestine, Texas, by H. H. Bailey, J. B. McKnight and A. W. Gregg.

## VIRGINIA.

S. H. Heatwole, Hinton, Va., is preparing to manufacture engines and other machinery.

M. C. McGuire and Mr. Scott are building a large woolen factory in Tazewell county, Va.

The Old Dominion Paper Co. has been chartered at Richmond, Va., with Le Roy E. Brown as president; W. G. Forbes, secretary and treasurer, and L. A. Sadler, superintendent. The capital is to be not less than \$5,000 nor more than \$100,000. The Old Dominion Paper Mills, recently operated by the Virginia Paper Co., have been taken and special new and improved machinery has been introduced.

## LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I., Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.



Bills have been introduced in the Virginia legislature to incorporate the Virginia Construction Co., to build railroads, bridges, elevators, etc., with James B. Pace, T. C. Leake, Jr., E. D. Christian, Thomas C. Williams and James T. Gray as incorporators; the Iron Mountain Co.; the Henry & Roanoke Railroad; the Murfreesboro Railroad & Telegraph Co., and the Point Sewell Railroad Co.

Kent Yates Callahan, Wytheville, Va., has ordered machinery for a full roller mill, which he will erect.

#### WEST VIRGINIA.

The Kariocofe Corn Harvester Co., capital stock \$4,800, has been incorporated at Martinsburg, W. Va., to manufacture corn harvesters, with P. A. Rohrbach as president, R. D. Hughes, secretary, and George E. Gaver, treasurer.

J. W. Ward has leased the old Charleston Handle Factory, at Charleston, W. Va., and is repairing it and will start it up; 12 to 15 hands will be employed.

A 3 story addition, 25x50 feet, is being erected at the flour mill at Lewisburg, W. Va.

#### BURNED.

The cooperage works of William Rose, Chattanooga, Tenn.; loss \$9,000. Will be rebuilt.

The tobacco factory of J. S. Lockhart, Durham, N. C.

M. E. Faucet's gin at Blossom Prairie, Texas; loss \$3,500.

The saw mill of John Zenf & Co., Memphis, Tenn.; loss on machinery is \$10,000.

The engine-room at the mill of the Pulaski Oil Co., Hawkinsville, Ga.

D. H. Turner's saw mill, 6 miles from Cluttsville, Ala.

A large fire Feb. 21, at Wilmington, N. C., destroyed about \$500,000 worth of property, including James H. Chadborn & Co's saw mill, B. Wright's flour and grist mill, the compress of the Champion Compress & Warehouse Co., and J. A. Fore's planing mill.

#### MARTINSBURG, W. VA., Feb. 22, 1886.

*Editor Manufacturers' Record:*

The Kariocofe Corn Harvester Company was organized February 11, 1886, with a capital of \$4,800, with privilege to increase to \$100,000. We will manufacture nothing but a corn harvester, which has been tested and is believed to be the only corn harvester in the world that does its work practically. It was invented in Jefferson county, in this State.

P. A. ROHRBAUGH.

#### \$10,000 Mill Company.

PEARSALL, TEX., Feb. 17, 1886.

*Editor Manufacturers' Record:*

The Pearsall Mill Company was organized February 8, 1886, with R. W. Hudson, president, and C. W. Cox, superintendent. Capital \$10,000, authorized \$50,000. At present will only operate corn mill, cotton gin, ice factory, etc. Will not put in flour mill now.

R. W. HUDSON.

#### New Machinery.

CONCORD, N. C., Feb. 21, 1886.

*Editor Manufacturers' Record:*

We are adding 40 looms to mill No. 2. We have in contemplation the refitting of our old mill, but plans are not yet matured. Have doubled the capacity of our dye house.

W. R. ODELL, Treasurer,  
ODELL MANUFACTURING CO.

WINSTON, N. C., Feb. 22, 1886.

*Editor Manufacturers' Record:*

Jennings & Hay will manufacture all grades of plug and twist tobacco.

E. H. JENNINGS.

#### Water Works.

GREEN COVE SPRINGS, FLA., Feb. 22, 1886.

*Editor Manufacturers' Record:*

The materials and machinery for sinking the necessary wells are partly on the ground, and balance is expected by next steamer. We commenced work February 3, and own the most desirable property in town for the Water Works. The cost will depend very much upon the extent to which it is carried. We are prepared to spend, if necessary, \$100,000, and intend to include gas works, if practicable, as we are now in communication with parties in reference to such work.

GREEN COVE SPRINGS WATER CO.

#### Spoke and Handle Factory.

COWAN, TENN., Feb. 20, 1886.

*Editor Manufacturers' Record:*

G. H. O'Mealey and A. A. Stong have started a spoke and handle factory at this place. Will manufacture sawed spokes and handles.

O. & S.

#### Stamp Mill.

CHARLOTTE, N. C., Feb. 22, 1886.

*Editor Manufacturers' Record:*

Have just completed and started a 10-stamp battery at the Horne & Bartrum Gold Mine, near Asheboro, N. C., with 25-horse-power engine.

MECKLENBURG IRON WORKS.

#### Will Rebuild Planing Mill.

PORT DEPOSIT, MD., Feb. 20, 1886.

*Editor Manufacturers' Record:*

I intend rebuilding planing mill, which has been wrecked by the flood, and expect to have the same running in about sixty days.

SAMUEL C. ROWLAND.

#### Capital Increased and Works to be Enlarged.

MEMPHIS, TENN., Feb. 17, 1886.

*Editor Manufacturers' Record:*

By a recent action of the directors our capital stock was increased to \$100,000, from \$75,000, and additions to our works agreed on, as soon as weather will permit.

BLUFF CITY STOVE WORKS,

#### Tobacco Factory.

HANSON, KY., Feb. 19, 1886.

*Editor Manufacturers' Record:*

Weir, Brown & Co. have recently started a tobacco manufactory here.

W. H. WEIR.

RALEIGH, N. C., Feb. 22, 1886.

*Editor Manufacturers' Record:*

The North Carolina Phosphate Co. are putting up a mill upon the premises of the Pioneer Manufacturing Co., for grinding phosphate rock. The Pioneer Manufacturing Co. is putting in bobbin and spool machinery.

P.

COVINGTON, KY., Feb. 20, 1886.

*Editor Manufacturers' Record:*

We have erected the Adam Schultz's celebrated hurricane malt mill at our brewery. Other improvements are contemplated.

JOHN SEILER.

NASHVILLE, TENN., Feb. 19, 1886.

*Editor Manufacturers' Record:*

The Columbia Hosiery Company are to unite with the Dyas Knitting Co., in the organization of a hosiery company, at Nashville, Tenn.

DYAS KNITTING CO.

**If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year, or six months for \$1.50.**

#### The Coal Traffic of the Norfolk & Western Railroad.

Ours is a country famous for the wonderful developments of its material resources during the past few years, at first in the North, the Northwest and the West, and recently in the South and the Southwest, but in none of these developments that I know of do I find anything quite as remarkable as the growth of the coal traffic of the Norfolk & Western Railroad during the past three years.

In June 1883 this railway began to ship coal from the Pocahontas mines of the Flat-top field to which it had extended its New River branch. Since then its shipments of coal have been:

In 1883.....	58,992 tons
In 1884.....	195,587 tons
In 1885.....	580,047 tons

Total of 3 years..... 834,626 tons

Comparing these figures among themselves I find that the traffic of 1884 was about three-and-one-third times that of 1883; that that of 1885 was about three times that of 1884; and that the traffic of 1885, the third year from its beginning, was about ten times that of 1883, the first year.

The above are noteworthy results. But far more remarkable ones appear when comparisons are made—"wise" ones as Holy Writ suggests—with the growth of the soft coal traffic of the two railways, that now carry to market, annually, several million tons of bituminous coal.

The Baltimore & Ohio Railroad began to convey Cumberland coal to market in 1842; in 1877, after a regular increase for thirty-six years in its traffic in this well-known and widely-used steam coal, it carried 818,450 tons of this coal to market, or only about one-fourth more than did the Norfolk & Western in the third year of its coal operations.

The Pennsylvania Railroad began the shipment of bituminous coal from the Clearfield region 1862; after twelve years operations, or in 1873, its traffic was 592,860 tons, or almost exactly the quantity carried by the Norfolk & Western in the third year of its operations.

If the Norfolk & Western, a Virginia railway, has succeeded in reaching in three years the position that it took one of these great coal railways 12 years and the other 36 years to reach, a thoughtful looker-on may well ask the question, "Whereunto will these things grow?" And he will find a wider range for reasonable anticipations if he will recall the fact that this railway has as yet in its operations merely reached the eastern border of the largest coking coal field in America and which its line will cross at right angles for 30 miles in its westward course, and that adjacent to and beyond that field, that of coking and steam coals, it will enter and cross for as many miles more one of the best of coal fields for furnishing gas, splint and block coals. When it shall have crossed these great coal-producing belts and formed western connections as it now has eastern, the day is near when its soft coal and coke tonnage will equal if not surpass that of any railway in this country.—Industrial South.

#### Philadelphia's Traction Cars.

So many complaints are daily received regarding the working of the cable car system in Philadelphia, that, unless something is said to explain the causes of their unsatisfactory working, the reputation of the whole system of cable cars may be injured. Daily, during the late cold weather, the cars have repeatedly stopped short, and it was a common sight to see passengers anxious to catch trains at the Pennsylvania depot, jumping out and running up Market street, with bags in hand, loudly uttering blessings on the traction system, which for them at that moment had no attraction at all. Stands are repeatedly occurring, serious accidents

have occurred, and, what is worse, others are feared. Now the question is, why should this be the case in Philadelphia, and the cable cars be generally condemned, while in Chicago and San Francisco they give universal satisfaction. It is not the question of the amount of work, nor the grades, nor the curves, for all these offered far greater difficulties in both the cities where the cable system has proved a success, but simply because in Philadelphia the whole thing has been wrongly managed. Successfully planning out and establishing a system of cable cars is as technical a profession as any individual branch of mechanics, and an expert specialist condemned the Philadelphia system and prophesied its failure before it was even built. This applied specially to the machinery itself, which is unequal to the work asked of it, and the consequent enormous tension put upon the cable is the chief cause of all the friction, strand-breaking, etc. We shall not go into the mechanical details of the causes of their failure, but explain that the tension they have to put on their cable is chiefly caused by the fact that their system of working does not give their cable sufficient bite; this occasions the tension, consequent friction, the strands breaking, &c. They will have to get the proper machinery sooner or later, and for the benefit of the public, it is their duty to do so at once. The traction people have got the "boodles," and public opinion should force them to do what is justly required for public comfort and safety.

We do not say anything about the false economy of laying the track in such inferior style and metal because the company must feel that fact sufficiently themselves, but that their machinery is wrong and not up to the work required, is what should be forcibly brought before the citizens of Philadelphia who are granting the company its rights and franchises, requires that safety and regular service should be given to the public.—Railway News.

Our Philadelphia friends should have come to Baltimore for their cable car system. The cable railways of New York, Chicago and Kansas City, constructed by Messrs. Poole & Hunt, of this city, are in successful operation, and have none of the defects and disadvantages enumerated above.

BLUE WING, N. C., Feb. 20, 1886.

*Editor Manufacturers' Record:*

Your editorial suggestion of a Southern Tariff Convention is certainly timely and a step forward in the right direction. It behooves Southern manufacturers, producers and representative men generally to assemble at no distant date in some representative Southern city—say Atlanta—and there in convention assembled give voice to their sentiments couched in language of unmistakable forcibleness on this all-absorbing topic. The policy of Morrison and his followers may suit certain classes and sections, but the best interests of the New South demand that the tariff shall remain as it is at present. We should foster the New South, her varied industries, her countless manufacturing springing into life from one end of her domain to the other, her rich mines of nearly every mineral known to the mineralogist, and see to it that she is protected during her rapid march to prosperity.

Free trade puts the South on a retrogressive basis; protection lends a helping hand.

CHARLES W. EDGECUMBE.

LINDEN, VA., Feb. 20, 1886.

*Editor Manufacturers' Record:*

Your efforts in so sedulously trying to have a convention of the Southern States on that vital question, the tariff, are patriotic and eminently wise, and every man in the South, rich and poor, ought to look upon you as a benefactor. The time has come when the interests of the country demand prompt action, and I trust the matter will be pressed to a speedy termination.

Yours, very respectfully,

JAMES H. SILLS.



### The Hooker Patent Feed Water Heater and Purifier.

The object of this invention is to produce a simple, durable and efficient feed water heater for steam boilers, in which the heat of the exhaust steam from an engine will be utilized to its greatest extent in heating the feed water before it passes into the boiler; also to provide sediment and scum chambers of ample size, so that all the impurities in the feed water can be blown out of the heater and prevented from entering the boiler, thereby increasing greatly the efficiency, durability and life of the boiler. The distinguishing characteristics of this construction of heater lie in the method of so conducting the tubes and the tube sheet heads that they can expand freely without any danger of being loosened in their settings, in their heads, or in bringing any undue strains on the heater, and also so that all the tubes and their tube sheets, which are connected together, can be readily removed for cleaning or inspection if required, ample provision being made for cleaning the heater quickly of all impurities, thus making this heater so durable as to outlast the life of any boiler. By reference to the cuts, in which like letters indicate like parts, the construction and operation of this heater will be readily understood.

Fig. 1 is an elevation of heater.

Fig. 2 is a vertical sectional view through the steam and water openings.

The operation is as follows: The exhaust steam enters at A and fills the heater around the tubes and escapes at A', while the feed water enters at pipe B. This pipe is capped on its end and has several holes or openings in its sides through which the water enters to the settling or sediment chamber F, the sediment settling to the bottom of this chamber, while the water rises and passes up through the tubes H H into the scum chamber K on top of the heater. This scum chamber has a pipe screwed into the outlet opening B' in chamber near the upper end of the tubes. This pipe is capped on its ends and has holes or openings on its top side, so that the scum floating on top of water in the tubes will pass over this pipe and up into the dome of scum chamber, where it can be blown off through the safety valve M, while the sediment and impurities in the bottom of the settling chamber L can be blown out through the valve C. The upper ends of the tubes are inserted in an upper cylindrical tube sheet I', and expanded in said sheet in the usual manner of setting boiler tubes. The lower ends of the tubes are secured in like manner in the lower flanged tube sheet I. The rim of this tube sheet is turned off true and slides in the stuffing box N. In this stuffing box is placed the packing. Gland O presses against this packing and is screwed up and adjusted by screws P P. These screws pass through the outside of heater, and thus all the tubes are packed by one gland, and the packing can be screwed up from the outside while the heater is in operation. The tubes are all left free to expand, and as there is very little movement of the lower tube sheet in its stuffing box, the packing will last for a long time. The drain valve D can be opened to discharge the water of condensation. When the engine is not in motion any leakage in the tubes or packing can be quickly detected. By removing the scum chamber, all the tubes and their tube sheets can be quickly taken out together for cleaning or repairs, and this without disturbing the heater or any of the pipes permanently attached to it. A hand

hole of ample size at the bottom of the settling chamber is closed by the cone E. By removing this cone the heater can be quickly cleaned or packed. This method of packing the tubes of heaters simplifies the construction greatly, and prevents all danger of the tubes, when expanded or contracted, from starting in their tube sheets, and does away with the use of curved or bent tubes for overcoming the effects of expansion. Every part of this heater can be easily taken apart or put together without disturbing the heater or permanent attachments thereto.

The boiler pressure is all within the tubes and settling and scum chambers.

This heater is the invention of the well-known pump man, Mr. W. D. Hooker, and manufactured by the Hooker-Colville Steam Pump Co., 2d and Carr streets, St. Louis, and 55 S. Canal street, Chicago.

### The Holyoke Testing Flume and the Hercules Wheel.

The Holyoke Water Power Co. control the water power of the Connecticut river at

canals that the Holyoke Water Power Co. built their present expensive testing flume. We quote from their own circular in regard to it:

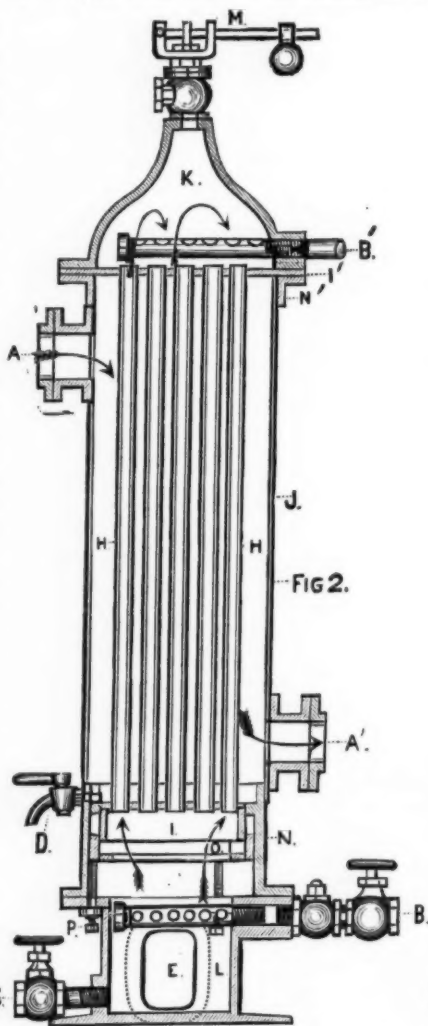
"For the purpose of making the necessary experiments on the wheels of their tenants before they are set in the mills, the Holyoke Water Power Co. has built at a large outlay a permanent testing flume. Over this testing flume is a substantial brick building containing repair shops, blacksmith shop, an oil room and offices. Wheels are tested here both for power and for amount of water discharged. They are usually tested at five or six different openings of the speed gate, ranging from wide open to the opening at which the discharge is one-half that at full opening, and at five or six different velocities of revolution at each gate opening, making some thirty-odd experiments in all on each wheel. The final result is, that for all practical purposes the water wheel has been converted into a water meter, and the discharge may be known under any of the conditions under which it is found in the mill. Besides

Stevens Institute, Hoboken, N. J., now of Sibley College, Cornell University, Ithaca, N. Y.:

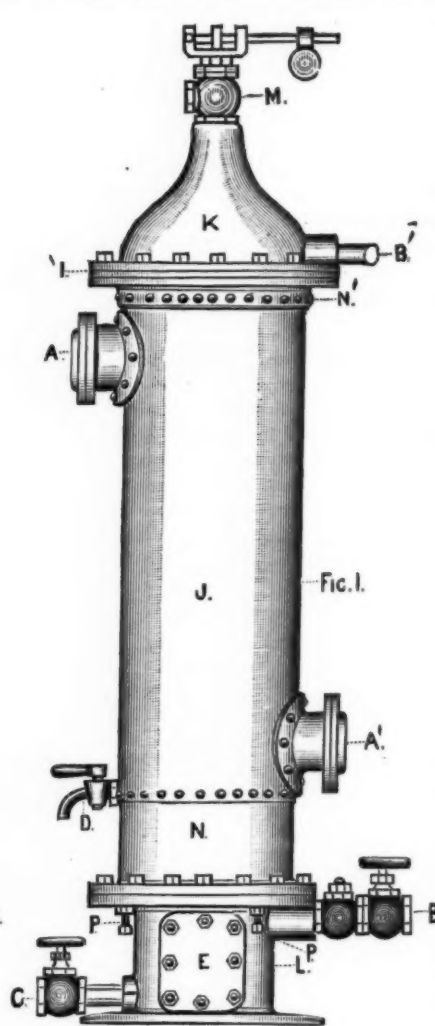
"I found the testing flume to be a substantial and well-built affair, constructed in heavy masonry and covered by a good brick building, in which were various rooms and offices needed for the convenient prosecution of the business. The whole is an exceedingly perfect arrangement for the purpose had in view at the time of its establishment. The method of leading the water into the flume, of conducting it to and through the wheel under test, the system of weir measurement, the method of setting the wheel and of measuring its power while under test, are all, in my opinion, most excellent. The measurements of the flume taken in my presence show it to be built with substantial accuracy, and the measurement of heads is made in the best manner yet devised. The dynamometer used is good in its design, and, so far as I can judge, is satisfactorily exact in its determination of resistance. There is, in my opinion, no reason why this flume, with this apparatus, should not give perfectly reliable and very accurate measures of the efficiency of wheels tested therein. I could find no point in regard to which I could take exception as being in any important respect defective, and I see no way in which I could improve upon the arrangements now existing in any degree. The whole system of testing is, as it seems to me, thoroughly excellent.

I watched the tests made during the day of my visit with very great care, observing the method of handling the regulator and dynamometer, and noting the method of observation of heads with especially critical care. The work was done by those in charge of it with equal skill and conscientiousness. The handling of the dynamometer brake, which is an operation demanding great coolness and steadiness, was well done, and the reading of the heads was always, so far as my observation extended, taken on the stroke of the electrical signal-bell, and with all the nicety of measurement possible with even such finely adjusted apparatus. The system and the working of the system are equally admirable.

Examining the methods of record and the system of calculation and checking off results derived from the data obtained by test, I was pleased to find that they gave evidence of having been planned by an engineer well versed in the subject, and both painstaking and precise in his practice. The precautions taken to detect and eliminate any defective figures and to base the reported results on the most exact data obtained, and the means adopted to secure truthful values of efficiency, were, to my mind, deserving of high praise. I am convinced that you may accept the results reported from that office with perfect confidence. The errors that may occur are not likely to be as serious as in the most ordinary of business calculations, and the system includes so many checks that no error affecting the final figures for efficiency to any appreciable extent is likely to pass undetected. In my opinion the city of Holyoke is fortunate in the possession of this testing flume, and in having a board of directors for its water-power company who have the intelligence to comprehend and the courage to acknowledge the importance of so perfect a means of determining the value of turbines proposed to be used in the mills taking water from their canals. Such excellent work, done as it is at a minimum expense, should in time have a very important influence upon the development of turbines of maximum possible efficiency in the United States. The importance in this relation of having a testing flume of good construction, built with care and skillfully operated, is beyond estimation. The flume at Holyoke, having ample capacity for all tests ever likely to be desired, being planned and constructed with the greatest care and with that knowledge of the necessities of the case which has been the outcome of long experience in testing turbines, being under the



THE HOOKER PATENT FEED WATER HEATER AND PURIFIER.



Holyoke, Mass. The mill-owners pay this company an annual rental for the right to draw a fixed quantity of water from their canals. The unit of measurement is a mill power, which is the right to draw a certain number of cubic feet of water per second under a stated head, all of which is carefully specified in the lease given to the mill-owner. When the flow of water in the river is abundant the water-power company allow the manufacturers to draw more than their leases call for, and charge them a regular rate for the increased supply. In dry seasons, however, it becomes necessary to restrict the manufacturers to the exact quantity of water to which they are entitled by the terms of their lease.

The system enforces economy in the use of water, and makes the selection of a water wheel a question of great importance to the mill-owner. The system also necessitates a careful measurement of the quantity of water used by each wheel. It was for the purpose of accurately gauging the capacity of water wheels intended to draw water from their

this, its efficiency or the value of the wheel as a water motor is also known.

Being fitted to make their tests at any time, summer and winter, and with many tests to make, the expense of a single test when made by the Holyoke Water Power Co. need be but moderate. In former years such tests could be made only in the mills where the wheel happened to be set, and at great expense for preparation, all of which preparation was available for that one wheel only. In this way the cost of a wheel test might readily amount to \$2,500, where the Holyoke Water Power Co. would now undertake to do it for \$100 or \$150. This has gradually led to the making of a great many wheel tests each year for outside parties, wheels being sent from all parts of the United States."

The testing flume, the apparatus there in use and the methods practiced have been carefully and repeatedly examined by eminent engineers and received their unqualified approval. We quote at length from the report of Prof. R. H. Thurston, formerly of



control of a body having no interests to affect those of makers unfavorably, and placed as it is at the service of the public without discrimination or reservation, may well be made the standard for the whole country."

Such testimony as the above should convince any one who entertains doubts as to the accuracy of the present Holyoke tests that his doubts are not well founded.

The testing flume has already become the recognized authority among the leading water-wheel builders of the country, and most of them have sent wheels there to be tested. The Holyoke Machine Co., manufacturers of the Hercules Turbine Water Wheel, have taken advantage of their close proximity to the testing flume to make an extended course of experiments upon their wheels, and they have found the flume of inestimable value in working up all the sizes of their wheels to that standard of excellence which has now been attained. All sizes of the Hercules Wheel from 9 inches to 54 inches, 16 in all, both right and left hand, making 32 distinct wheels, have been tested in this flume, some of them many times before they reached the requisite efficiency at all stages of the gate opening. The two largest sizes, 57 inches and 60 inches, have not been tested, only because the water-power company have no dynamometer brake capable of holding the power of these wheels. The testing of all sizes of a wheel is something never before attempted by a wheel builder. The usual method is to test one, perhaps two or three wheels, basing claims for efficiency and power for all sizes of the wheels on the test of these two or three. It is claimed to have been proved beyond a peradventure at the Holyoke Testing Flume that the test of one wheel is no criterion of the efficiency of another wheel of the same kind but of a different diameter, or even of the same diameter but of a different hand. The patterns are not the same. The only way to know positively what each size of a water wheel will do is to test each size.

It has taken the Holyoke Machine Co. seven years and a large expenditure of money to carry through this course of tests with the Hercules Wheel, but the makers feel that they are fully repaid by the results obtained. In Holyoke, Hercules Wheels now furnish more than one-half of all the power used there, and they are fast coming into general use in all parts of the country.

It has long been a practice of some water-wheel manufacturers to table their wheels at a higher percentage of efficiency than the wheels would really give in a test. Inasmuch as the Holyoke Machine Co. have tested all sizes of their wheels, they know precisely the capacity and efficiency of each. In the new catalogue of the Hercules Wheel, issued since the tests were completed, each size up to the 54-inch is actually tabled below what it has given in the test. So far as the wheel is concerned, therefore, the purchaser of a Hercules Wheel may feel absolutely certain that he will receive all the power the wheel is advertised to give.

The speed of this wheel is remarkably uniform. It exhibits none of that variation in the power and efficiency under apparently similar conditions which has been so common a feature of the tests of many turbines. Its power of doing work with a restricted supply of water, *i. e.*, at partial gate, with little loss of efficiency is something unusual, and something to be especially remarked as a valuable characteristic of the wheel.

The Hercules Wheel came so rapidly into general favor, and the business of the Holyoke Machine Co. increased to such an extent, that they found it necessary to greatly enlarge their facilities for manufacture. They therefore built in 1882 a large shop in Worcester, Mass., thoroughly equipped it for the manufacture of water wheels, and transferred this branch of their business to that city, where they will be glad to answer all inquiries from persons contemplating the improvement of their water power.

### The New Tariff Bill.

Among the changes in the tariff proposed by Morrison's new bill are the following:

#### FREE LIST—ADDITIONS.

Lumber, hewn and sawed, and timber used for spars and in building wharves; timber, squared or sided, not specially enumerated or provided for; sawed boards, plank, deals and other lumber of hemlock, white-wood, sycamore and basswood, and all other articles of sawed lumber; hubs for wheels, posts, last-blocks, wagon-blocks, oar-blocks, gun-blocks, heading-blocks and all like blocks or sticks, rough-hewn or sawed only; staves of wood of all kinds, pickets and palings, laths, shingles, pine clapboards, spruce clapboards, wood, unmanufactured, not specially enumerated or provided for (proviso—inoperative when imported from a country laying an export tax); salt in bags, sacks, barrels, or other packages; salt in bulk; hemp, manilla and other like substitutes for hemp not specially enumerated or provided for; jute butts, jute-sunn; Sisal grass and other vegetable substances not specially enumerated or provided for; iron ore, including maganiferous iron ore; also the dross or residuum from burnt pyrites; sulphur ore, as pyrites or sulphure of iron in its natural state; copper, imported in the form of ores; lead ores and lead-dross; chromate of iron or chromic ore; mineral substances in a crude state and metals unwrought, not specially enumerated or provided for; coal, slack or culm; coal, bituminous and shale; coke; indian corn, or maize; oats; hay; potatoes; chicory-root, ground or unground, burnt, prepared; acorns and dandelion-root, raw or prepared, and all other articles used or intended to be used as coffee, or as substitutes therefor, not specially enumerated or provided for; bristles; grease; tallow; grindstones, unfinished; stones unmanufactured or undressed, free-stone, granite sandstone and all building and monumental stone, except marble, not specially enumerated or provided for; bees-wax; glycerine, crude, brown or yellow, of the specific gravity of one and twenty-five hundredths or less at a temperature of sixty degrees Fahrenheit, not purified by refining or distilling; extract of hemlock and other bark used for tanning, not otherwise enumerated or provided for; indigo, extracts of and carmined; Lee's crystals; baryta, sulphate of barytes, unmanufactured; borate of lime; crude borax; potash, crude, carbonate of or fused and caustic potash; nitrate of, or saltpetre, crude; logwoods and other dye-woods and extracts and decoctions of; coal tar, crude; ochre and ochry earths, amber and amber earths and sienna and sienna earths, when dry; all earth or clay unwrought or unmanufactured, not specially enumerated or provided for.

#### CLASSIFIED LIST—REDUCTIONS.

The bill provides that from and after July 1, 1886, the following rates of duty shall take effect:

##### WOOD.

Sawed boards, plank, deals and other lumber of hemlock, whitewood, sycamore and basswood, and all other articles of sawed lumber, when planed or finished, for each side so planed or finished 50 cents per 1,000 feet, board measure.

##### COTTON AND COTTON GOODS.

Cotton, thread, yarn, warps or warp-yarn, whether single or advanced beyond the condition of single by twisting two or more single yarns together, whether on beams or in bundles, skeins or cops, or in any other form, valued at not exceeding 25 cents per pound, 8 cents per pound; over 25 and not exceeding 40, 13 cents per pound; over 40 and not exceeding 50, 16 cents per pound; over 50 and not exceeding 60, 20 cents per pound; over 60 and not exceeding 70, 27 cents per pound; over 70 and not exceeding 80, 32 cents per pound; over 80 and not exceeding \$1, 36 cents per pound; over \$1, 40 per cent. ad valorem.

On all cotton cloth, not bleached, dyed, colored, stained, painted or printed, and not exceeding 100 threads to the square inch, counting the warp and filling (and exceeding in weight five ounces per square yard), 2 cents per square yard; if bleached, 2½ cents per square yard; if dyed, colored, stained, painted or printed, 3 cents per square yard.

On all cotton cloth, not bleached, dyed, colored, stained, painted or printed, exceeding 100 and not exceeding 200 threads to the square inch, counting the warp and filling, 2½ cents to the square yard, if bleached, 3 cents per square yard; if dyed, colored, stained painted or printed, 4 cents per square yard; provided that on all cotton not exceeding 200 threads to the square inch, counting the warp and filling, not bleached, dyed, colored, stained, painted or printed, valued at over 8 cents per square yard; bleached, valued at over 10 cents per square yard; dyed, colored, stained, painted or printed, valued at over 13 cents per yard, there shall be levied, collected, and paid a duty of 35 per centum ad valorem.

On all cotton cloth exceeding 200 threads to the square inch, counting the warp and filling, not bleached, dyed, colored, stained, painted or printed, 3 cents per square yard; if bleached, 4 cents; if dyed, colored, stained, painted, or printed, 5 cents, provided that on all such cotton cloths not bleached, dyed, colored, stained, painted or printed valued at over 10 cents per square yard; bleached, valued at over 12 cents per square yard, and dyed, colored, stained, painted or printed, valued at over 15 cents per square yard, there shall be levied, collected and paid a duty of 35 per centum ad valorem; 40 per cent. ad valorem on cloths less than 100 threads to a square inch and less than 5 ounces in weight, and no duty on above over 40 per centum.

Spool thread of cotton, 6 cents per dozen spools, containing on each spool not exceeding 100 yards of thread, exceeding 100 yards on each spool, for every additional 100 yards of thread or fractional part thereof in excess of 100 yards, 6 cents per dozen.

#### METALS, FINISHED AND ROUGH.

Metals—Iron in pigs, iron kentledge, spiegeleisen, wrought and cast scrap-iron and scrap-steel, one-fourth of a cent per pound.

Iron railway bars, weighing more than 25 pounds to the yard, \$12.50 per ton.

Steel railway bars and railway bars made in part of steel, weighing more than 25 pounds to the yard, \$12.50 per ton.

Bar-iron, rolled or hammered, comprising round iron not less than three-fourths of one inch in diameter, and square iron not less than three-fourths of one inch square, nine-tenths of 1 cent per pound; comprising flats less than 1 inch wide or less than three-eighths of 1 inch thick; round iron less than three-fourths of 1 inch and not less than seven-sixteenths of 1 inch in diameter, and square iron less than three-fourths of 1 inch square, 1 cent per pound.

Iron or steel tee-rails weighing not over 25 pounds to the yard, and iron or steel flat rails, punched, \$15 per ton.

Round iron, in coils or rods, less than seven-sixteenths of 1 inch in diameter, and bars, or shapes of rolled iron, not especially enumerated or provided for in this act, 1 cent per pound.

Sheet iron, common or black, no duty over 60 per centum.

Polished, planished or glanced sheet-iron or sheet-steel, by whatever name designated, no duty over 60 per centum.

Hoop or band or scroll or other iron, eight inches or less in width, and not thinner than No. 10 wiregauge, eight-tenths of 1 cent per pound; provided that all articles not specially enumerated or provided for in this act, whether wholly or partly manufactured, made from sheet, plate, hoop, band or scroll iron herein provided for, or of which such iron shall be the material of chief value,

shall pay two-tenths of 1 cent per pound more duty than that imposed on the iron from which they are made or which shall be such material of chief value, no duty over 60 per centum.

Iron or steel railway fishplates or splice bars, 1 cent per pound.

Horseshoe nails, hob nails and wire nails, and all other wrought iron or steel nails not specially enumerated or provided for in this act, 3 cents per pound.

Boiler tubes or flues or stays of wrought iron or steel, 2½ cents per pound.

No duty or rate of duty shall be levied, collected or paid in excess of 60 per centum ad valorem on any files, file-blanks, rasps or floats.

Steel ingots, cogged ingots, blooms and slabs by whatever process made; die blocks or blanks; billets and bars, and tapered or bevelled bars; bands, hoops, strips and sheets of all gauges and widths; plates of all thicknesses and widths; steamer, crank and other shafts; wrist or crank pins; connecting rods and piston rods; pressed, sheared or stamped shapes, or blanks of sheet or plate steel, or combination of steel and iron, punched or not punched; hammer moulds or swaged steel; gun moulds, not in bars; alloys used as substitutes for steel tools; all descriptions and shapes of dry; sand, loam or iron moulded steel castings, all of the above classes of steel not otherwise specially provided for in this act, no duty over 60 per centum; and on steel circular-saw plates the rate is reduced one-half cent per pound.

Iron or steel beams, girders, joists, angles, channelled, car-truck channels, T. T., columns and posts, or parts or sections of columns and posts, deck and bulb beams and building forms, together with all other structural shapes of iron or steel, 1 cent per pound.

Steel wheels and steel-tired wheels for railway purposes, whether wholly or partly finished, and iron or steel locomotive, car and other railway tires, or parts thereof, wholly or partly manufactured, 2 cents per pound; iron or steel ingots, cogged ingots, blooms or blanks for the same, without regard to the degree of manufacture, 1½ cents per pound.

Iron or steel wire covered with cotton, silk or other material, and wire commonly known as crinoline, corset and hat wire, shall pay 3 cents per pound in addition to the foregoing rates. No duty over 60 per centum on any iron or steel wire or article made from wire, and after December 31, 1886, no duty on iron and steel or any duty on iron and steel or any article of iron or steel above 50 per centum ad valorem.

Copper, regulus of, and black or coarse copper, and copper cement, 2 cents on each pound of fine copper contained therein; old copper, fit only for remanufacture, clippings from new copper and all composition metal in which copper is a component material of chief value, not specially enumerated or provided for in this act, 2 cents per pound; copper in plates, bars, ingots, Chili or other pigs, and in other forms not manufactured or enumerated in this act, 3 cents per pound.

#### SUGAR.

On all sugars 80 per centum of the several duties and rates of duty now imposed on said sugars. Inoperative as to sugars from countries laying export duties.

#### PROVISIONS.

Potato or corn starch, 1½ cents per pound. Rice starch and other starch, 2 cents per pound.

Rice, cleaned, 1½ cents per pound; uncleaned, 1 cent per pound.

Paddy, 1 cent per pound.

Broken or granulated rice, 20 per centum ad valorem.

#### HEMP, JUTE AND FLAX GOODS.

Brown and bleached linens, ducks, canvas, paddings, cot-bottoms, diapers, crash, huckabacks, handkerchiefs, lawns or other manufactures of flax, jute or hemp, or of which





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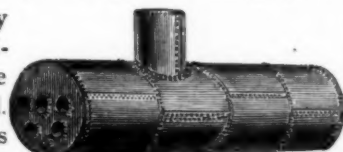
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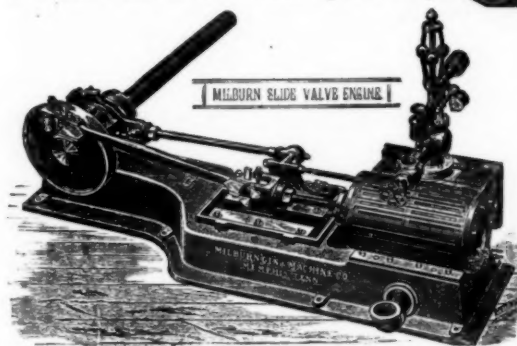
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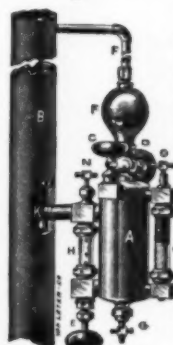
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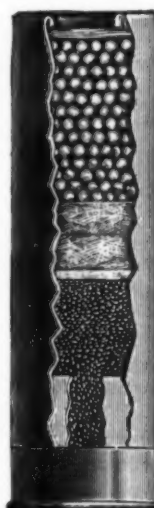
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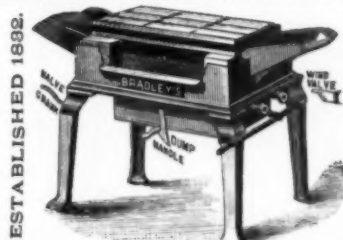
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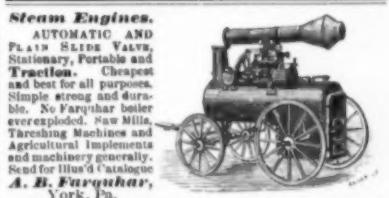
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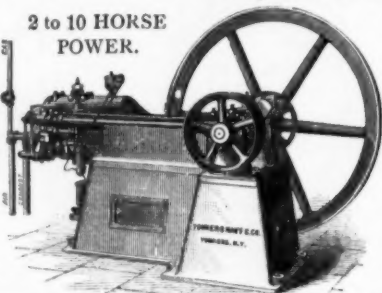
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### SOUTHERN REFERENCES:

Eagle & Phenix Mfg. Company, Columbus, Ga.  
Anniston Mfg. Co., Anniston Ala.  
J. P. King Mfg. Co., Augusta, Ga.  
Rose Mining Co., Charleston, S. C.  
Maryland Pavement Co., Baltimore, Md.  
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Charleston Bagging Co., Charleston, S. C.  
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Phosphate Mining Co., Beaufort, S. C.  
Brush Swan Electric Light Co., Norfolk, Va.  
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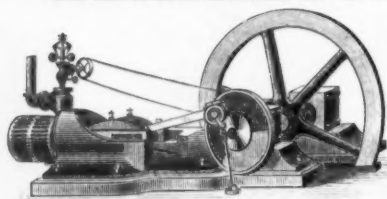
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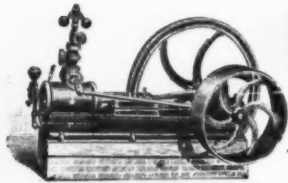
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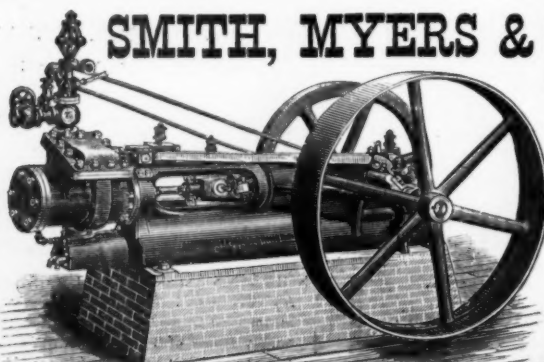
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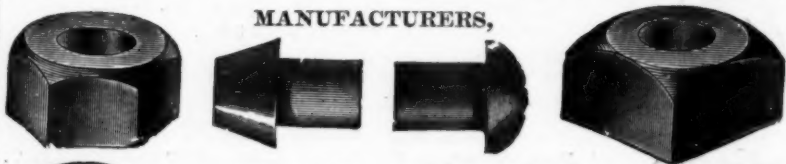
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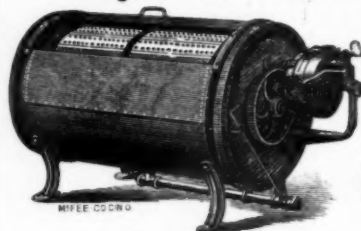
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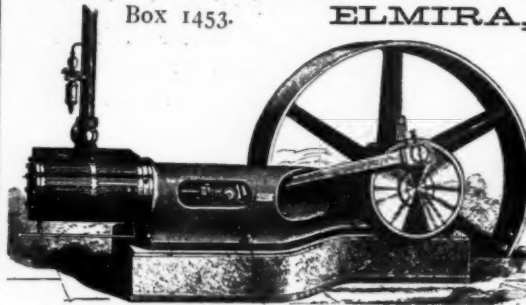
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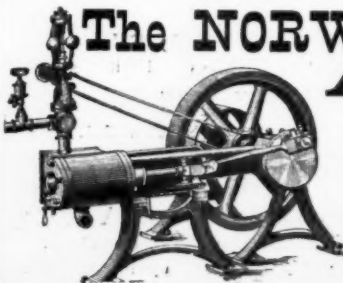
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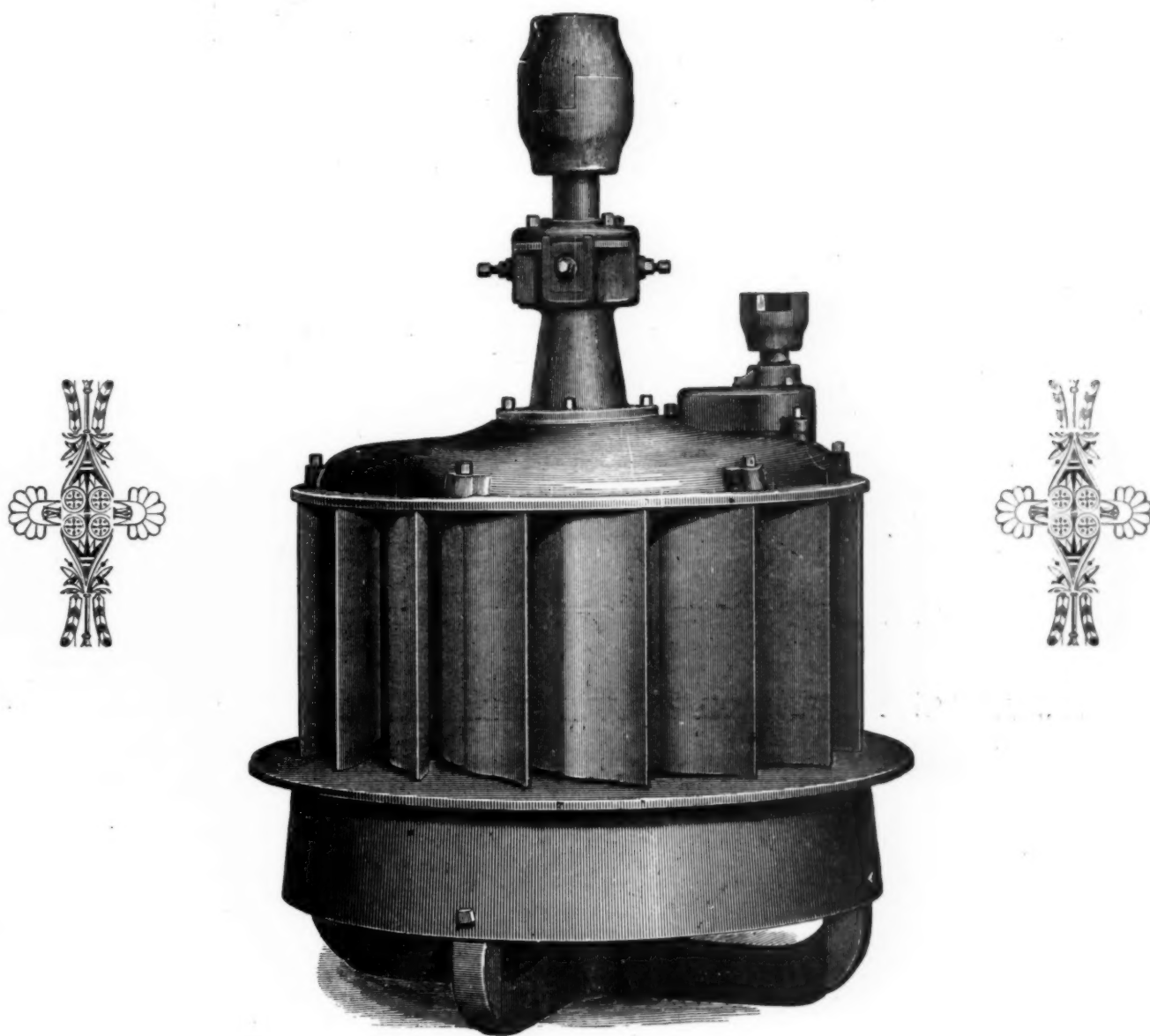




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## Literary Notes.

THE Quiver for March opens with a novel paper descriptive of some notable weather cocks, and the reader who has given little or no thought to this subject, will be surprised to find how much art has been brought to bear and how much money spent on these architectural finishing touches. One of these vanes recently made in London for a church at Hamburg cost nearly \$1,000. "Ye Gave me to Eat" is the suggestive title of a paper on the Glasgow poor children's dinner table, which is followed by a song, words and music, "O Worship the King." A story in two chapters, "A Strange Client," is begun and ended in this number. Other papers are, "Some Mistakes about Prayer;" "Distinguished Service in Suffering;" the second and concluding installment of "The Story of Wm. Penn," in the series "The Conquests of Peace," "The Three First Chapters of Human History;" the second instalment of the Rev. Hugh Macmillan's article "About a Pottery Mound," and Rev. Wm. M. Stratham's "Songs in Prison." The poetry of the number is of a distinctly religious nature, and is by S. S. McCurry and Frederick Langbridge. The illustrations are numerous, and the "Short Arrows" full. Cassell & Company, Limited, New York; 15 cents a number; \$1.50 a year in advance.

THE opening article in the Popular Science Monthly for March, "Biological Teaching in Colleges," by Professor W. G. Farlow, of Harvard University, is a sharp criticism of the failure of the colleges and the preparatory schools before them to give any adequate training to the observing powers on which, by the modern view, all true instruction ought to rest. In a "Thinking Machine," Professor Grant Allen makes a caustic exposition of the insufficiency of the ultra-materialistic way of accounting for mental phenomena which has come into fashion among some philosophers. Dr. John Dewey, of Michigan University, has a paper on "Health and Sex in Higher Education." "Proem to Genesis" is Mr. Gladstone's reply to Professor Huxley's "Interpreters of Genesis and Interpreters of Nature," which appeared in the February number of the Monthly. Dr. Charles C. Abbott discusses the value of the "Animal Weather-Lore." Professor Edward S. Morse furnishes an illustrated article on "Japanese House-Building;" Dr. Samuel A. Fisk presents the advantages of "Colorado as a Winter Sanitarium;" Dr. Heinrich Mayr discusses the "Durability of Resinous Woods," in the light of his own experiments; Dr. Grace Peckham considers the condition of "Infancy in the City," which is bad enough from the point of view of the chances of life; Mr. N. H. Egleston speaks a word in favor of the general institution and observance of "Arbor-Day." Mr. Lansing's instructive paper on "Discrimination in Railway Rates," and Chauncey Smith's interesting article on "The Influence of Inventions upon Civilization" are concluded. A portrait and biographical sketch are given of Sir John Bennet Lawes, the founder and manager of the famous Agricultural Experiment Station at Rothamstead, England. The editor at his "Fable" has some very plain talk on a recent case of "literary piracy." New York: D. Appleton & Company. Fifty cents a number; \$5 a year.

"MORGAN'S HORROR," published by Messrs. Cassell & Co., New York, is the second volume in their "Rainbow" series of original novels. It is fully equal to the first volume "A Crimson Stain" in interest and dramatic power.

MR. JOSEPH M. BROWN, Atlanta, Ga., general freight and passenger agent of the Western & Atlantic Railroad, has published a very handsome pamphlet entitled "The Mountain Campaigns in Georgia; or, Scenes on the W. & A." It is a very interesting

and graphic historical sketch of the famous battles fought along the line of the road from Chattanooga to Atlanta. The author has received highly commendatory letters from Generals Joseph E. Johnston and W. T. Sherman, who commanded respectively the Confederate and Federal forces during these campaigns. The pamphlet is superbly gotten up, illustrated with full page engravings, and with portraits of Generals Johnston and Sherman and Senator Joseph E. Brown.

THE YACHTSMAN'S GUIDE. By Capt. Howard Patterson. Published by the New York Navigation School.

This is a book written for yachtsmen. As the writer says in his preface, "While there are many excellent works on navigation and seamanship, it is a fact that up to the present time there has not existed a book written for, and especially adapted to, the needs of yachtsmen."

The book is in three parts, the first part being a rudimentary treatise on navigation, explaining the compass, the quadrant and the methods of observing altitudes of the sun, moon and stars; an explanation of semi-diameter dip, parallax and refraction; some remarks on the Gulf Stream and tides generally; the chronometer, and in short all that it is necessary for a gentleman to know in rudimentary navigation. Part II carries the yachtsman further on in the science and makes of him an expert navigator, showing how to shape a course and find a distance, how to get position by cross-bearings, how to obtain a latitude by meridian observation of the sun and by the stars, and how to find the longitude by chronometer. Part III contains rules on yacht organization, the rules of the road, the lead and line and how to mark it, details of routine duty, how to rig a temporary rudder or drag, some very full remarks on the handling of steam and sailing vessels and a complete dictionary of sea terms. The book will be valuable to all who aspire to own or sail a yacht.

The March number of Cassell's Family Magazine opens with the new serial, "A Wilful Young Woman," which is getting decidedly more interesting with each installment. This is followed by "A description of Stellenbosch"—"The Oxford of South Africa." To those who fancy South Africa a howling wilderness, inhabited by naked savages, this article, with its illustrations, will be a revelation. A paper entitled "A Soiree of the Royal Society," gives us a capital idea of the august body of scientists. Professor Blackie in his "London for Londoners," takes us out of the streets and introduces us into London society; while the family doctor has some plain talk about digestion, and a word about meals. There are other articles of interest, short stories, poems, sketches, etc. Cassell & Company; 15 cents a number; \$1.50 a year in advance.

THE witching face of Miss Farren looks coyly at us from the first page of the Magazine of Art for March. It is a full-length portrait in sanguine, reduced from Bartolozzi's engraving of Sir Thomas Lawrence's famous portrait. From this charming picture we turn to read an illustrated description of the Tiber: Ostia to Bagnorea," by Edgar Barclay, which is followed by a brightly-written account of "The Institute," in which the writer has some pertinent remarks on the present course of art in England. This paper is illustrated with two engravings from notable pictures, one being a full page reproduction of Mr. F. D. Millet's "The Granddaughter," a most pleasing idea, worked out perhaps with more sentiment than is usual in Mr. Millet's work. The "Poem and Picture" this month is "A Black Night," William Allingham furnishing the poem, and W. J. Hennessy the picture. In the series on the "Romance of Art" we are told the story of Canova's love and disappointment by Leader Scott. Every young woman who wields a brush will be inter-

ested in "An Atelier des Dames," by E. (E. Somerville, in which the art life of young ladies in Paris is described with much truth and no little humor. "Chests and Cabinets" is the title of this month's paper on furniture, and Diane de Poitiers is the profile cut by Miss Robinson, from the French Renaissance. The exhibition of "The Society of British Artists" is criticised, and so is "Art in Australia," which the writer, Rev. W. J. Loftie, seems to think at a low ebb. Cassell & Company; 35 cents a number; \$3.50 a year in advance.

## THE MARKETS.

OFFICE MANUFACTURERS' RECORD, BALTIMORE, Feb. 24, 1886.

Business during the past week has not been specially active. The market continues firm, and prices remain as last quoted:

Ref. Bar Iron, 1 to 6x3/4 to 1.....	1.85@	2.10
" " 1 to 4 1/2x3 1/4 to 1.....	1.85@	2.10
" " 3/4 to 2, round and square.....	1.85@	2.10
Hoop Iron, 1 1/2 wide and upward.....	2 1/2@	2 1/4c
Band Iron, from 1 1/2 to 6 in. wide.....	2.30@	2 1/2c
Horseshoe Iron.....	2 1/2@	2 1/4c
Norway Nail Rods.....	5 @	5 1/4c
Black Diamond Cast Steel.....	8 @	9 c
Machinery Steel.....	3 @	5 c
Spring Steel.....	3 @	5 c
Common Horse Nails.....	10 @	14 c
Railroad Spikes, 5 1/2x9-16.....	2 1/2@	2 1/4c
Horse Shoes, 7 keg.....	3 70	
Mule Shoes, ".....	4 70	
Steel Boiler Plate.....	3 1/2@	3 3/4c
Iron Boiler Plate.....	2 1/2@	4 c
Boiler Tubes.....	55 off list	

There has been no change in the condition of the pig iron market since our last report, and we repeat quotations:

Baltimore Charcoal Wheel Iron (all Baltimore ore).....	25 @	26 00
Virginia C. B. Charcoal Wheel Iron.....	25 @	26 00
Anthracite, No. 1.....	18 @	19 00
" " 2.....	16 @	17 00
" " 3.....	15 @	16 00
" " Mottled and White.....	13 @	14 00
Old Iron Rails.....	21 @	22 00
No. 1 Wrought Scrap.....	18 @	19 00
Old Car Wheels.....	16 @	16 50

## HARDWARE.

Trade has improved since our last issue and orders are more liberal. Salesmen report an improved feeling throughout the country and are looking for a good spring trade. The market is firm, and, with a fair demand continuing, there will be no declines of importance. Stocks and dies have changed the monotonous discount of 10 to 15 to 35%, caused by a new competitor.

The nail market is firm and demand good. The price is \$2.50@2.60.

## Philadelphia Iron Market.

PHILADELPHIA February 23, 1886.

Business yesterday amounted to something, notwithstanding it was Washington's birthday. The pig iron brokers closed several contracts for forge, foundry and Bessemer. The strong prices rule all through. The lower or usually neglected irons are coming into notice among buyers who want prompt deliveries. As soon as a dozen brands of these are sold a month or two ahead, the way will be cleared for a general advance, for which matters have been shaping. Today's selling prices are \$16.50@17.50 for forge from standard to special, and in some cases a little higher. Foundries run from \$17 to \$20. Good sales of Bessemer were made at \$19.25@19.50, and contracts for week count up some 18,000 tons. Spiegel is worth \$27.50. Muck bars go at \$29@30. Merchant bar iron does not gain in demand, as some thought. Manufacturers do not relish paying \$16@17 for forge and sell the product at 1.70. They held their usual meeting last week, but did not do as the puddlers wanted as to advancing prices. Business does not warrant. Nails are quiet. People who would like to buy are afraid to buy now, lest the whole West starts up and nails drop to \$2.20 or less. Plate, tank, skelp and all kinds of sheet iron are about

as they were. Structural iron contracts are near at hand. Last week was the best in steel rails we have had for weeks. People rushed in while the 150,000 tons were to be parcelled up, and got what they wanted at \$34@34.50, but if Congress was adjourned they would pay \$36. Old rails are still scarce and high, but inquiry seems to have fallen off a little.

## List of Patents.

The following Patents were granted to citizens of the Southern States, bearing date Feb. 16, 1886. Reported expressly for this paper by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.

Boswell, J. I., near Chase City, Va. Combined seed-planter and fertilizer-distributor.....	336,285
Brock, Granville, Sparta, Ky. Wheel for vehicles.....	336,207
Champion, J. P., Gainesville, Ga. Car-brake.....	336,090
Clark, F. S., and J. A. Bachman, Austin, Tex. Locking device for haling-press doors.....	336,293
Coleman, H. G., Gordonton, N. C. Tether.....	336,295
Craig, S. W., Grimm's Landing, W. Va. Weighing-scale.....	336,472
Hanks, F. M., and H. N. Sibley, Midway, La. Band-saw mill.....	336,407
Holtzman, J. O., Beaver Creek, Md. Feed-cutter.....	336,320
Laska, M. A., New Orleans, La. Automatic water-works.....	336,327
Leggett, J. W., Sharon, Miss. Meat-hook.....	336,123
McComas, A. W., and H. A. Fitzhugh, Austin, Texas. Fan attachment for rocking furniture.....	336,128
Reilly, R. M., and F. King, Baltimore, Md. Faucet.....	336,159
Ritch, M. M., and P. McRea, Laurinburg, N. C. Cotton and corn sweep.....	336,160
Rittase, E. N., Baltimore, Md. Oven-peel.....	336,349
Robbarts, G. W., Elmo, Tex. Track-raiser.....	336,161
Ruffin, William, and R., Como, Miss. Wheel cultivator and fertilizer-distributor.....	336,163
Stanley, J. D., Wilmington, N. C. Apparatus for distilling turpentine and for the purification of the crude products of distillation thereof. Reissue.....	10,689
Terry, T. W., Baltimore, Md. Letter envelope sheet.....	336,446
Thies, C. A., Concord, N. C. Cam for stamp-mills.....	336,447
Tillman, W. A., Grape Vine, Tex. Fence.....	336,499
Tompkins, D. A., and F. Oliver, Charlotte, N. C. Oil-seed-meal-heating machinery.....	336,175
Trabue, Wm., Louisville, Ky. Magazine fire-arm. Reissue.....	10,690
Turman, W. B., Waldron, Ark. Permutation-lock.....	336,358
Welch, Wm., Moss Point, Miss. Center-board for vessels.....	336,365
White, F. F., Western Port, Md. Car-wheel lubricator.....	336,461
Wilson, C. G., Milledgeville, Ga. Spark-arrester.....	336,504
Wynn, J. C., Hunt County, Tex. Sorghum boiler and evaporator.....	336,279
Young, J. D., Elgin, Tex. Rein-holder.....	336,462

## PATENT LAW.

## TRADE MARK LAW.

## PAUL BAKEWELL,

Attorney at Law,

79 & 80 Turner Building, 304 8th St., ST. LOUIS, MO.

## REFERENCES:

Branch, Crookes & Co., }  
Liggett & Myers Tobacco Co., } St. Louis.  
Excelsior Manufacturing Co., }

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## Cincinnati Iron Market Report

Specially reported by ROGERS, BROWN & Co., Pig Iron Commission.

CINCINNATI, Feb. 22, 1886.

The market has unquestionably gained strength during the week. A sale of 1,500 tons of Southern Coke No. 1 mill iron was made on a basis of \$16.00 cash at the Ohio River, and an attempt was made to buy 1,000 to 3,000 tons more, but the entire list of Southern coke furnaces could not furnish the iron at the price. The feeling is gaining ground that the coming year is to mark the largest consumption of pig iron ever known, and as the cost of making is slowly creeping up in the various districts, sellers feel that prices must be sustained, and it is noticeable that as a rule, buyers share in this view. There is fair demand for car wheel irons with very short supply. There has been more banking of furnaces in the Northern districts on account of the coke famine, and the effect is beginning to be felt in the short supply of pig iron. No change, however, is made in prices. We quote as follows cash on cars at Cincinnati:

## HOT-BLAST FOUNDRY.

Ohio and Southern Strong Coke No. 1.	\$18 00@18 50
" " " " No. 2.	17 00@17 50
" " " " No. 3.	16 50@17 00
Ohio Soft Stonecoal,	No. 1. 18 50@19 00
" " " " No. 2.	17 50@18 00
Mahoning and Shenango Valley Coke,	No. 1. 19 50@20 50

## CHARCOAL IRON.

Hanging Rock,	No. 1. \$21 00@22 00
" " " " No. 2.	20 00@21 00
Tennessee and Alabama,	No. 1. 19 00@19 50
" " " " No. 2.	18 00@18 50

## FORGE.

Strong Neutral Coke.	\$16 00@16 50
Mottled " "	14 50@15 00
Cold Short.	14 50@15 00

## CAR WHEEL AND MALLEABLE.

Southern Car-Wheel Iron.	23 00@25 00
Hanging Rock C. B.	20 00@20 50
" " " " W. B.	22 00@22 50
Lake Superior Malleable.	24 00@25 00

Specially reported by E. L. HARPER & Co.

CINCINNATI, February 22, 1886.

The market remains unchanged. Prices are firm and demand moderate. There has been a good trade in foundry grades with small buyers. There is no disposition on the part of furnaces to push sales. Labor troubles still continue in the coke district, and the strikers seem determined to hold out for the advance. We quote for cash on wharf or cars here:

## FOUNDRY.

Hanging Rock Charcoal, No. 1.	\$19 50@20 00
" " " " No. 2.	18 50@19 00
Southern Charcoal	18 50@19 50
" " " " No. 1.	17 50@18 50
Strong Neutral Coke,	" 17 50@18 00
American Scotch,	" 17 50@18 00

## GREY FORGE.

Neutral Coke.	15 00@15 50
Cold Short.	14 50@15 00

## CAR WHEEL AND MALLEABLE.

Hanging Rock, strictly cold blast.	25 00@26 00
Hanging Rock C. B., strictly warm blast.	21 00@21 50
"Cranberry," N. Carolina Warm Blast.	23 25@23 75
Amherst and Virginia Warm Blast.	21 50@22 00
Lake Superior Charcoal, all grades.	23 00@24 00

## Louisville Iron Market.

Specially reported by W. B. BELKNAP & Co., Nails, Wire, Iron, Hardware, Carriage and Wagon Goods.

LOUISVILLE, KY., Feb. 22, 1886.

Trade reports as for the past two months have necessarily savored more of the meteorological than of the commercial, inasmuch as the continued cold and snow affects trade so keenly. The ice blockade in the Ohio River has been raised and now boats are running regularly.

The largest run of coal for many years, viz: five million bushels, has started from Pittsburgh for the lower river ports. Pittsburgh coal declined here 50 cents per ton in a single day, and it is now selling at \$2.50 delivered in small lots. This in turn reacts on Kentucky coal, of which the best grades of lump are selling at \$2.00 per ton, and possibly less in round lots.

Bar Iron.—Holds its own in the way of prices, although no very large quantities are being inquired for.

Sheet.—On the contrary, is as cheap as we have ever known it for the lighter gauges since the depression of 1879.

Nails.—Are arriving only in small quantities. There would be a great scarcity were it not that the demand for consumption has been exceptionally light.

Wire.—The wire market is quite firm, and the manufacturers of barbed fencing have gained courage from the fact that several of the St. Louis moonshine concerns have taken out license.

General trade is in pretty good shape, although disappointing to those who expected extraordinary features. We quote:

Bar Iron.	1 80@1 90
Crescent Steel.	10 @ 12
Plow Steel slabs.	2 50 @ 2 75
No. 17 Sheet.	2 50 @ 3 10
Galvanized sheet, best.	50 @ 55
Galvanized lower barbed wire.	4 75 @ 5 00
Burden Shoes.	4 00 @ 4 10
Junata Shoes.	3 70 @ 3 75
Carriage Bolts.	75 @ 105
Steel nails.	2 65 @ 2 75
Iron Nails.	2 50 @ 2 60
Rope, Sisal.	8 @ 8 1/2
Rope, Manila.	12 1/2 @ 13
Screws, American Screw Co's list.	75 @ 80 1/2
Axes.	50 @ 6 75
Cross cut saws, wide, per foot.	26 @ 38cts.
Cross cut saws, narrow, per foot.	21 @ 23cts.

With concessions to large or wholesale buyers.

Specially reported by GEO. H. HULL & Co., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, KY., Feb. 22, 1886.

The market for two weeks has been in a very uncertain condition. Very few furnaces would book orders and there was little demand from buyers. If furnaces commenced to offer iron before buyers were ready to take it, it might depreciate prices. If buyers commenced to inquire before furnaces were ready to deliver, prices might stiffen. There is some inquiry now from buyers and the market is looking stronger than it did a week ago. We quote for cash as below:

## PIG IRON.

Southern Coke, No. 1 Foundry.	\$18 00@18 50
" " " " No. 2.	17 00@17 50
" " " " No. 3.	16 50@17 00
Hanging Rock Coke, No. 1 Foundry.	18 00@18 50
" " " " No. 2.	17 00@17 50
Southern Charcoal, No. 1 Foundry.	18 00@19 00
Silver Gray, different grades.	16 50@17 50
Southern Coke, No. 1 Mill, Neutral.	16 00@16 50
" " " " No. 2.	15 00@15 50
" " " " Cold Short.	15 50@16 00
Southern Charcoal, No. 1 Mill.	17 50@18 00
White and Mottled, different grades.	13 00@14 50
Southern Car Wheel, standard brands.	25 00@26 00
" " " " other brands.	21 00@22 00
Hanging Rock Cold Blast.	27 00@28 00
" " " " Warm.	21 00@22 00

## St. Louis Iron Market.

Specially reported by ROGERS, BROWN & Co., Gay Building, 204 N. 3rd street, St. Louis. W. H. SHIELDS, Manager.

ST. LOUIS, Feb. 22, 1886.

Prices are firm, with an inclination to advance rather than to decline; inquiries for delivery within the next few months are quite numerous, nevertheless the market is quiet and somewhat irregular, owing to the coke strike. The machine shops report the outlook better than for some months past. The market as a whole is very satisfactory. We quote:

## HOT-BLAST CHARCOAL.

Missouri.	\$17 00@18 00
Southern.	18 00@20 00
Ohio.	— @ —

## COKE AND COAL.

Missouri.	— @ —
Southern No. 1.	18 75@19 00
Southern No. 2.	17 75@18 00
Southern No. 2 1/2.	17 25@17 50
American Scotch.	18 00@21 00

## MILL IRONS.

Missouri.	— @ —
Southern.	15 75@16 75

## CAR-WHEEL AND MALLEABLE IRON.

Southern.	22 00@25 00
Lake Superior.	23 00@24 00

## MISCELLANEOUS.

Old Wheels.	16 00@17 00
Old Rails.	21 00@22 00
Connellsville Coke, East St. Louis.	5 30@—

Iron, par.

## Chattanooga Iron Market.

Specially reported by LOWE & TUCKER, Brokers and Commission.

CHATTANOOGA, TENN., Feb. 22, 1886.

There is nothing new to note in any of the trade circles, and a quiet although firm feeling seems to prevail. The furnaces are selling all of their product, without any exertion, at full market prices, and from general appearances there appears to be a

consumptive demand for all of their output, in large round lots. The following figures seem to prevail: \$16.00 for No. 1 and \$1.00 less for the respective numbers down. All the manufacturers are running full time, and many of them are increasing their capacity by additions of both buildings and machinery. We make some changes in our quotations:

No. 1 Foundry.	\$15 50 @ 16 50
No. 2 Foundry.	14 50 @ 15 00
American Scotch.	14 50 @ 15 00
Gray Forge.	13 00 @ 14 00
Car-Wheel Iron.	23 00 @ 25 00
Ores, Red and Brown.	1 50 @ 2 25
Furnace Coke.	2 00 @ 2 30
Nails, car-load lots, 30 days.	— @ —
Bar Iron, per 100 lb.	— @ 1 75
Old Rails.	— @ 21 00
Old Wheels.	— @ 15 00
Wrought Scrap, No. 1.	— @ 70
" " No. 2.	— @ 50
Cotton Tie Clippings.	— @ —
Cast Scrap.	— @ —
Railroad Splices.	— @ 1 85
Railroad spikes.	— @ 2 25
Light Steel Rails, long ton.	— @ —
Barb wire—Cambria link.	— @ —
Barbed wire—four point galvanized.	— @ —
Barb ware.	— @ —

## TRADE NOTES.

## An Open Letter.

[From National Harness Review.]

NEW HAVEN, CONN., Jan. 16, 1886.

JEFFERSON JACKSON:

We don't believe that a paper controlled by a fair, decent, honorable man, would dirty itself so much as to publish such scurrilous stuff as yours has done for one Covert, of Troy, N. Y., and an article in your January number credited to a West Troy paper, without first ascertaining the truth of the charges.

We say this presuming that you knew when you published a lot of stuff from him a year or two since that his claim to a patent that covered any part of our snap-hook was only a lie, which you helped him (for dirty gold) for a while, to palm off on a public that ought to have a right to expect better conduct of any newspaper circulating as a trade paper.

The injunction, alluded to in the Troy paper, copied from it by you in your last, was obtained by a complaint running over with falsehood, and was dissolved on first attempt. We will not advertise with you just yet. You are on probation as to future decency.

I. B. SARGENT.

The above is a specimen of Sargent & Co's literature recently received by us, and we consider it such a unique and characteristic epistle as to merit publication. It is certainly very rich, if not refined, in its expressions, and in its vituperation fully equals a former effusion, though not possessing the "crowning" feature, which for charity's sake, we forbear mentioning.

That our readers may more clearly understand the true inwardness of the animus exhibited we will state that the Covert Manufacturing Co. claim that Sargent & Co. have, for a long time, been infringers on no less than eight of their patents, and after taking a most effective means to expose what they claim to be infringements, have commenced a suit against Sargent & Co. for said infringements. December 5th, we believe, an injunction was issued by the court restraining the defendants, and placing them under \$5,000 bonds pending the suit. At a subsequent term of the court, held January 15th, the defendants by presenting affidavits purporting to be made by a number of individuals who were not in court, succeeded in securing from the court a dissolving provisional order, from which we quote as follows:

"And it is further ordered that the defendants on or before the 19th day of January, 1886, make, execute and file in the office of the clerk of this court a bond to said complainant in the sum of \$10,000, with two sureties, to be approved by this court, conditioned that the said defendants will pay to said complainant all damages and costs which may be awarded said complainant herein.

And it is further ordered that said defendants file in said clerk's office on the first day of each and every month hereafter, during the pendency of this suit, a verified statement of all goods made and sold by them during the preceding month, which are constructed in the manner shown, described and claimed in the letters patent in

this suit, and which said complainant claims infringe said letters patent."

Thus it will be seen that the defendants, Sargent & Co., are placed under double the amount of the previous bond for all damages that the plaintiff may sustain until the suit is finally decided, which is brought for \$50,000. Those of our readers who have perused our columns during the last three or four years have no doubt read with interest our just criticisms on the questionable acts of Sargent & Co. Our scathing, just and well-merited articles were prompted by our desire to expose the questionable appropriation of patents by our friends Sargent & Co., doing so in the firm conviction that the true course and duty of an honorable journal is to denounce and expose all frauds, of whatever character, and to enlighten and warn its readers against the base deceptions that unprincipled parties are daily endeavoring to practice upon them. We know of no mitigating circumstances, no valid claim of right or ignorance, to excuse or uphold patent "pirates" in the course they pursue, and seemingly they lose sight of every sense of right and justice in their attempts to secure "dirty gold." (This euphonic term we take from Messrs. Sargent's letter.)

For all of our editorials on this subject to enlighten the trade and expose infringers we have never received, nor would we receive if it had been offered, a single dollar and the false accusation of Sargent & Co. is but another evidence of their utter lack of all commendable attributes.

"We will not advertise with you just yet. You are on probation as to future decency," say the Sargents. If the gentlemen think we can alter our course on the strength of the mild offer of a future bribe in the way of prospective advertising patronage, they are mistaken. We want their business on a purely business basis—as we secure all of it, viz: value given for money paid us; and doing business solely on our own merits, we feel quite independent as to the policy we shall pursue editorially. Owing to the generous recognition of our efforts by the trade, the Review feels no necessity for compromising its standing as an independent paper—to secure the advertising of any firm, and we fear the term of "probation" will be a long one, as far as Messrs. Sargent & Co. are concerned.

It is no small feather in the cap of Mr. C. M. Spencer, the patentee of the Spencer Repeating Shot Gun, that his principle of magazine and repeating has been adopted in England, as is shown in the following report of recommendation made by the Enfield Committee. The British admiralty, acting on the recommendation of Rear Admiral Hopkins, director of naval ordnance, has decided to supply the navy this year with 3,000 Spencer-Lee Magazine Rifles, by way of trying this arm. The Enfield Committee selected the Spencer-Lee and Owen Jones Magazine Rifles as the two best submitted to the government, the committee adding in its report that, provided certain minor improvements could be made in the Spencer-Lee Rifle, this arm would be the superior of the two. These improvements were duly carried out, and the committee then recommended that an equal number of both rifles should be issued to the navy and the army for further trial. The admiralty, however, decided to only try the best of the two rifles recommended by the Enfield Committee. The enterprise shown by the British in adopting all improvements in arms sets a commendable example, and is somewhat in contrast with the recent action of the ordnance department of our own government, which seems quite averse to stepping outside the beaten path. In a recent competitive test the Spencer Gun was put through all the tests of explosion—the sand test, and rust—with complete success, yet it was with the utmost difficulty, even in the face of the fact that the gun bore every test perfectly satisfactory, that the report was made to include



it in competition with a pattern in use for a long time.—Age of Steel.

THE various mills of the Oliver Oil Co., in Charlotte, N. C., and Columbia, S. C., are all run by Westinghouse Engines—seven in all. One of 100 horse-power is now being erected in the latter mill.

THE Rue Manufacturing Co., Philadelphia, have issued a new catalogue of their injectors, boiler-testing apparatus, etc. The catalogue is profusely illustrated, and will be of interest to all steam users.

WE call attention to the advertisement of the Barbour Machine Works, Eufaula, Ala., who solicit correspondence from those having contracts to let for the manufacture of any special machinery. They also make a proposition that will be of interest to capitalists.

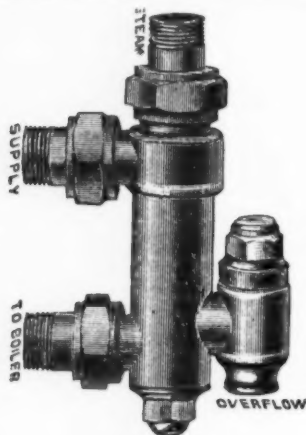
THE Gulf, Colorado & Santa Fe Railroad are putting a 65-horse-power Westinghouse Engine into their new shops at Galveston, Texas, and the Florida Railway & Navigation Co., similarly, at Fernandina, 35 horse-power; likewise, the Wabash, St. Louis & Pacific, 75 horse-power, at Decatur.

#### Important.

The improvements of the Grand Union Hotel are simply elegant, and the hotel is always kept in perfect order. It is so convenient to all the depots that guests arriving by the Grand Central Depot have their baggage transferred to and from the Grand Union Hotel in five minutes, free of charge. Guests arriving by steamer or railroad, South, North, East or West, are conveyed to the Grand Union Hotel by the elevated railroad for five to fifteen cents, thereby saving \$3 carriage hire. During the past year 110,000 people occupied the 613 rooms of the Grand Union Hotel at \$1 and upwards per day, including of course its elegant suites of rooms for families on the European plan. The dining-rooms, restaurant, cafe, lunch and wine-rooms were supplied with the best at moderate prices. Families lived better at the Grand Union Hotel, and for less money, than at any other first-class hotel in New York.

THE American House, Boston, is adding every day to its fame and popularity as one of the best hotels in the East. There is no pretentious display, but everything is of the very best, and a desire to please is apparent in every department.

T. M. Parker, Steel Stamps, Stencils, Hartford, Ct.



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- 2 12x20 " " Plain " " "
- 3 9½x15 " " Rotary Valve " "
- 1 8x12 Straight Line, " "
- 1 10x12 Vertical, " "
- 2 8x12 " " " "
- 1 7x12 " " " "
- 2 4x5 " " " "
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- 1 15x30 " " " " " "
- 1 16½x36 Putman Automatic Cut-off, second-hand.
- 1 10½x18 Portable, new.
- 1 9x15 " " " "
- 1 7x12 " " " "
- 1 6x10 " " " "

### HOISTING ENGINES.

- 1 5x8 Double Cylinder with Boiler and Pump, on Base, new.
- 1 10x12 Double Cylinder, new.

### BOILERS.

- 1 Upright, 36 in x 5 ft 6 in. 1 10-in flue, F box, new
- 1 " 36 in x 7 ft 9 in. 1 12-in " " "
- 1 " 36 in x 5 ft 6 in. 1 8-in " " "
- 1 " 36 in x 6 ft 55 2-in " " "
- 1 Portable Locomotive, " "
- 1 Upright, 48 in x 10 ft 8 in., second-hand.
- 1 Horizontal, 40 in x 18 ft. 2 13-in flues, new
- 1 " 44 in x 18 ft. 2 16-in " " "
- 1 " 48 in x 8 ft. 28 3¼-in " 2d-hand
- 1 " 44 in x 20 ft. 2 16-in " " "
- 1 " 44 in x 11 ft 6 in. 34 3-in " new
- 1 " 48 in x 18 ft. 2 18-in " " "
- 1 " 48 in x 17 ft 3 in. 34 4-in " " "
- 1 " 50 in x 22 ft. 2 12-in and 4 8-in flues, new
- 1 Upright, 42 in x 8 ft. " " "
- 1 " 44 in x 8 ft. " " "

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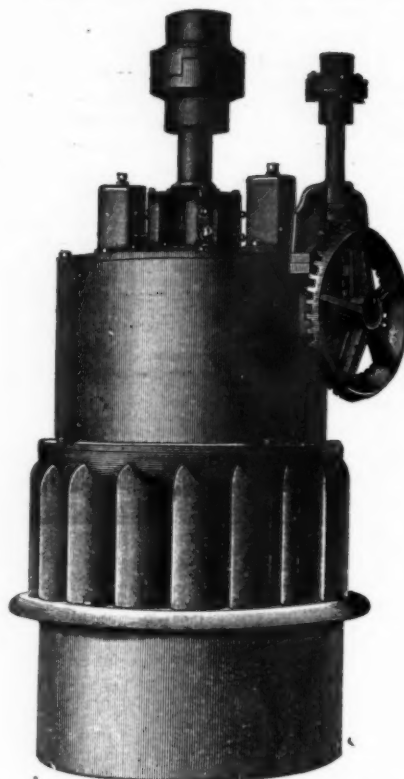
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SEND FOR CATALOGUE No. 3.

## HOLYOKE MACHINE CO., WORCESTER, MASS.

Wheels Now in Use in Holyoke, February 1st, 1885.

Name of Wheel.	Number.	Horse-Power Furnished.
Hercules.....	53	10,576
Boyden.....	38	5,398
American.....	10	825
Tyler.....	10	311
Hunt, Waite & Flint.....	7	375
Riflon.....	6	440
Jonval.....	4	655
Swain.....	1	160
New American.....	1	65
Aousten.....	1	75
Victor.....	2	150
Total.....	133	19,030

### EAGLE & PHENIX MANUFACTURING CO.,

COLUMBUS, GA., Feb. 25, 1885.

HOLYOKE MACHINE CO., STEPHEN HOLMAN, Treas.

Dear Sirs—Within the past four years I have ordered four "Hercules" wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a "Hercules" wheel has been added each time a new wheel was wanted. In Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The "Hercules" is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal, mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon. Yours truly, JOHN HILL.

### CONNECTICUT RIVER PULP MILL,

HOLYOKE MACHINE CO.: HOLYOKE MASS., November 24, 1884.

We are now using 22 "Hercules" wheels, under heads from 12 to 40 feet, and they have always given satisfaction. We have used a variety of Turbines, but where economy in the use of water is required nothing equals the "Hercules." In every respect they are first class.

D. H. & J. C. NEWTON.

### GEORGE R. DICKINSON PAPER CO.,

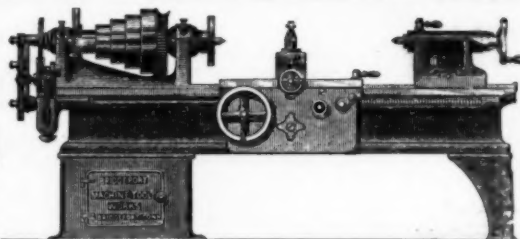
HOLYOKE MACHINE CO.: HOLYOKE, MASS., December 17, 1884.

Gentlemen—We started our mill with three "Hercules" wheels. We raise the gates Monday morning and close them Saturday night. They have never cost us a cent for repairs nor caused us a moment's delay. We want nothing better. Yours very truly, GEORGE R. DICKINSON, Treas.



## E. P. BULLARD,

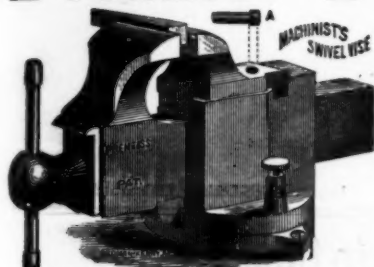
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Adjustable Jaw.  
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CANNOT GET OUT OF ORDER.  
Cheapest and Best Vises for Railroad Shops, Ma-  
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Every Part Interchangeable.  
CAN BE USED ON ANY VISE.

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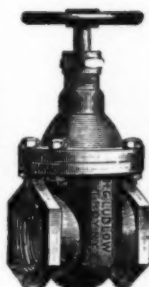
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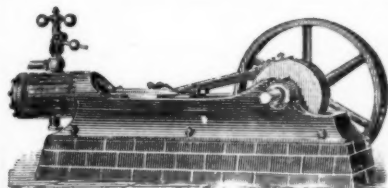
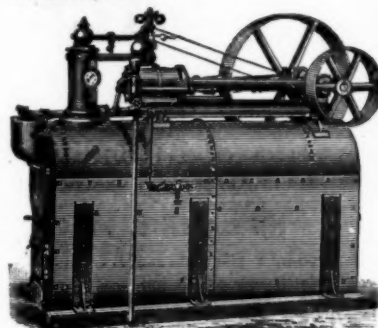
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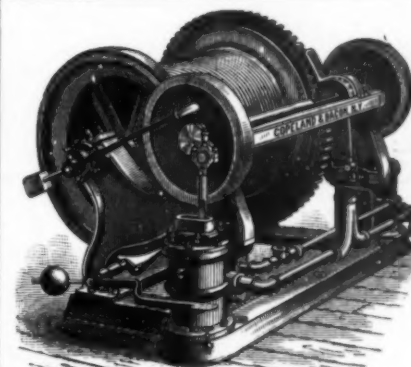
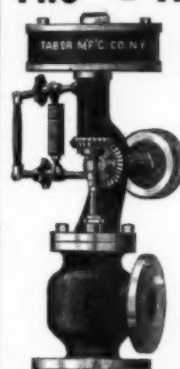
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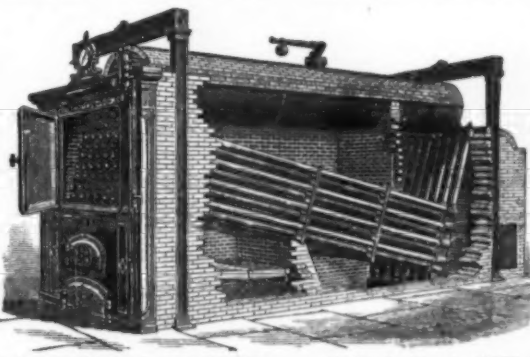
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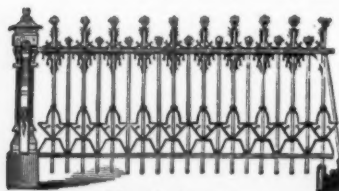
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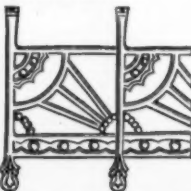
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with those having contracts to let for the manufac-  
ture of special machinery, castings, iron or woodwork.  
Would entertain propositions from reliable source  
calculated to increase volume of business. Entire  
plant new, machinery latest improved, labor cheap,  
location high, healthy and near mineral region of  
our State. River and rail transportation. Address

**BARBOUR MACHINE WORKS.**

Eufaula, Barbour Co., Ala.

### A1 SEWER PIPE CLAY,

Delivered f. o. b. vessel at Bermuda Han-  
dred, James River, at \$1.00 per ton. Write  
for sample.

**JAMES R. WERTH,**

RICHMOND, VA.

Cheap.

Second Hand.

Good Condition.

### PLANER.

18 in. x 20 in. x 3 1/2 feet.....\$125

### HORIZONTAL BORING MILL.

40 in. swing, 56 in. between centers....\$420

### EDWIN HARRINGTON, SON & CO.

North 15th Street and Pennsylvania Avenue.

PHILADELPHIA, PA.

### BERNHARD DIETZ, Manufacturer of Printers' Rollers,

and Roller Composition. Factory, cor. Light and  
Mercer streets, Baltimore. Prices: Composition,  
(bulk) 30 cents per lb.; for Casting, also, 30 cents per  
lb. Orders by Mail promptly attended to.



→ **HARDWARE.** ←**Baltimore WHOLESALE Prices.**

ANVILS.	
Eagle and Vulcan.....	10 c. dis 20%
Wright's.....	10 c. dis 20%
Armitage's Mouse Hole.....	10 c. dis 20%
Trenton.....	10 c. dis 20%
Wilkinson's.....	10 c. dis 20%
COGNERS AND BITS.	
Conn. Valley Mfg. Co.....	dis 60% to 10%
Douglas Mfg. Co.....	7 1/2% from list of
Ives.....	Jan. 7, 1880
Cook's Douglas Mfg. Co.....	dis 60% to 10%
Grissold.....	dis 60% to 10%
Patent Solid Head.....	dis 25%
Russell Jennings' Auger, Dowell, Machine-	
Dowell and Hand Rail Bits.....	dis 10% to 10%
Ives' Jennings' Bits.....	dis 10% to 10%
Expansive Bits, Clark's small, 1/8; large, 26.....	dis 25%
Expansive Bits, Ives.....	dis 25%
Expansive Bits, Black's.....	dis 25%
Hollow Augers, Ives.....	dis 25%
Hollow Augers, Douglas.....	dis 25%
Hol. Aug., Bonney's Adjust., 1/2 doz \$4.8, dis 25% to 10%	
Hol. Aug., Stearns' Adjust., 1/2 doz \$4.8, dis 25% to 10%	
Hol. Aug., Ives' Expansive, each \$4.50, dis 25% to 10%	
Hol. Aug., Universal Expansive, each \$4.50, dis 25% to 10%	
Wood's.....	dis 25%
Gimlet Bits.....	dis 25%
Gimlet Bits, Diamond.....	dis 25%
Double Cut Gimlet Bits, Shephardson's.....	dis 40%
Double Cut Gimlet Bits, Douglas.....	dis 33%
Morse's Bit Stock Drill.....	dis 50%
L'Hommedieu's Ship Augers.....	dis 15%
SAWING MACHINES—WITHOUT AUGERS.	
Sewing Brass Ferrule.....	\$3.50 gross—dis 40% to 10%
Patent Sewing, Short.....	\$1.50 gross—dis 40% to 10%
Patent Sewing, Long.....	\$1.50 gross—dis 40% to 10%
Patent Peg, Plain Top.....	\$1.00 gross—dis 40% to 10%
Patent Peg, Leather Top.....	\$1.20 gross—dis 40% to 10%
AWLS, BRAD SETS, AC.	
Awls, Sewing, Common.....	75c. to \$1
Awls, Shouldered Peg.....	75c. to \$1
Awls, Patent Peg.....	50c. to \$1.50
Awls, Shouldered Brad, 1/2 gross \$2.70, dis 25% to 10%	
Awls, Handled Brad.....	dis 25% to 10%
Brad Sets, Aiken's.....	dis 25% to 10%
Brad Sets, No. 4, 1/2 doz \$1.50, dis 25% to 10%	
Brad Sets, Stanley's, No. 1, 1/2 doz \$1.50, dis 25% to 10%	
Brad Sets, Stanley's, No. 2, 1/2 doz \$1.50, dis 25% to 10%	
Brad Sets, Stanley's, No. 3, 1/2 doz \$1.50, dis 25% to 10%	
AXES.	
Collins & Co.....	\$7.25; beveled.....\$7.75
Chas. Hays Co.....	\$7.25; beveled.....\$7.75
Lippincott or Mann's.....	
Single Bit, 1/2 to 3/4 and under.....	dis 25% to 10%
Single Bit, 1/2 to 3/4 and over.....	dis 25% to 10%
Double Bit, 1/2 to 3/4 and under.....	dis 25% to 10%
Double Bit, 1/2 to 3/4 and over.....	dis 25% to 10%
Double Bit, beveled.....	dis 25% to 10%
Second quality Axes.....	50 cts. less than above
AXLES.	
Sheldon & Co., iron.....	55% off
AXLE GREASE—Fraser's.....	1 lb. 6c.
BALANCES.	
Spring Balances.....	dis 40% to 10%
BELLS.	
Hand, Light Brass.....	dis 75% to 10%
Hand, White Metal.....	dis 60% to 10%
Hand, Silver Chime.....	dis 60% to 10%
Hand, Globe (Cone's Patent).....	dis 25% to 10%
Gong, Abbe's.....	dis 25% to 10%
Gong, Yankee.....	dis 25% to 10%
Gong, Barton's.....	dis 25% to 10%
Leon Reading.....	dis 25% to 10%
Pull, Brook's.....	dis 25% to 10%
Crank, Taylor's.....	dis 25% to 10%
Lever, Sargent's.....	dis 25% to 10%
Bloomfield.....	dis 25% to 10%
Lever, R. & E. M. Co's.....	dis 25% to 10%
Call.....	dis 25% to 10%
Cow, Common Wrought.....	dis 25% to 10%
Cow, Western, Sargent's List.....	dis 25% to 10%
Cow, Kentucky, Sargent's List.....	dis 25% to 10%
Cow, Moore's or Dodge's, Genuine Ky., new list:	
Nos. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000	

BRIGHT WIRE GOODS.	
New list.....	dis 70% to 10% to 10%
BULL RINGS.	
Union Nut Co.....	dis 55%
Sargent's.....	dis 60% to 10%
Humason, Beckley & Co's.....	dis 60% to 10%
BUTTS.	
Wrought Brass.....	dis 70%
Cast Brass, Fast Joint.....	dis 20% to 10%
Cast Brass, Loose Joint.....	dis 10% to 10%
Fast Joint, Narrow.....	dis 60% to 10%
Fast Joint, Broad.....	dis 60% to 10%
Loose Joint.....	dis 70% to 10%
Loose Joint, Japanned.....	dis 70% to 10%
Loose Joint, Jap, with Acorns.....	dis 70% to 10%
Parliament Butts.....	dis 70% to 10%
Mayer's Hinges.....	dis 70% to 10%
Loose Pin, no Acorn.....	dis 70% to 10%
Loose Pin, Acorns.....	dis 70% to 10%
Loose Pin, Acorns, Japanned.....	dis 70% to 10%
Loose Pin, Acorns, Jap'd, Plated....	dis 70% to 10%
Tips.....	dis 70% to 10%
Wrought Iron.	
Fast Joint, Narrow.....	dis 60% to 10% to 10%
Fast Joint, L. Narrow.....	dis 60% to 10% to 10%
Fast Joint, Broad.....	dis 60% to 10% to 10%
Loose Joint, Broad.....	dis 60% to 10% to 10%
Table Butts, Back Flaps, &c.....	dis 60% to 10% to 10%
Inside Blind, Regular.....	dis 60% to 10% to 10%
Inside Blind, Light.....	dis 60% to 10% to 10%
Loose Pin, Wrt.....	dis 60% to 10% to 10%
Loose Pin, Light.....	dis 60% to 10% to 10%
Spring Hinges—	
Geer's Spring and Blank Butts.....	dis 30%
Hart Manufacturing Co.....	dis 60% to 10%
American Spring Hinge Co's.....	dis 25%
Gem Spring Hinges.....	dis 25%
Blind Butts, Shepard's, Nos. 50 and 60.....	dis 70%
Blind Butts, Shepard's, No. 50.....	dis 70% to 10%
Blind Butts, Shepard's, No. 75.....	dis 70% to 10%
Blind Butts, Lull & Porter.....	dis 80%
Blind Butts, Huffer.....	dis 50% to 10%
Blind Butts, Clark's, Nos. 1, 3, 5.....	dis 80%
Standard Lull & Porter.....	dis 75% to 10%
BOW	
Humason, Beckley & Co's.....	dis 55% to 10%
Sargent & Co's.....	\$19.70 and 21.40; dis 60% to 10%
Hotchkiss.....	dis 25%
BUTCHER'S CLEAVERS.	
Humason & Beckley Mfg. Co.....	dis 25%
Bradley's.....	dis 25%
Beatty's.....	dis 25% to 10%
1 2 3 4 5 6 7 8	
\$16.50 19.00 21.50 24.00 27.00 30.00 33.50 36.50	
CAN OPENERS.	
American.....	gross \$7.50, dis 10%
New Idea.....	\$15.00 gross
No. 4, French.....	dis 25% to 10%
No. 5, Iron Handle.....	gross \$7.50, dis 10%
Sardine Scissors.....	gross \$7.00, dis 10%
Sprague, No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	dis 50% to 10%
Universal.....	dis 33% to 10%
CAPS, PERCUSSION, 1,000.	
U. M. C., F. C. trimmed.....	50c
U. M. C., F. L. ground.....	dis 10% to 10%
U. M. C., Cen. fire ground.....	70c
U. M. C., Double W. Proof.....	\$1.40
G. D. & S. B.....	33c. dis 10%
E. B. 1-10, Eley's.....	60c
Musket, in 1-10's.....	55c
Hicks Ground Edge in Brass Boxes.....	55c
CARTRIDGES.	
Rim.....	dis 60%
Central Fire, pistol size.....	dis 40%
" " Military.....	dis 1.00
B. B. Caps, Round Balls.....	dis 1.60
" Swaged Conical.....	dis 1.45
NEW LIST ON CARTRIDGES.	
Rim-fire, 22 short.....	\$ 5 long.....\$ 6.00
" 32 ".....	10 ".....15.00
" 38 ".....	18 ".....18.00
" 41 ".....	15 ".....17.50
Central Fire—32, \$11.00; 38, \$13.50; 41, 15.00; 44, \$19.	
CARDS.	
Horse and Curry, new list, July, 1881.....	dis 10%
Cotton, new list, July, 1881.....	dis 10%
Wool, new list, July, 1881.....	dis 10%
CARPET STRETCHERS.	
Cast Steel, Polished.....	dis 25% to 10%
Cast Iron, Steel Points.....	dis 25% to 10%
Bullard's.....	dis 25%
CASTERS.	
Bed.....	dis 60% to 10%
Plate and Shallow Socket.....	dis 60% to 10%
Deep Socket.....	dis 25% to 10%
Martin's Patent (Phoenix).....	dis 25%
CATTLE LEADERS.	
Humason, Beckley & Co's.....	dis 60% to 10%
Sargent's.....	dis 60% to 10%
P. S. & W.....	dis 25% to 10%
CHAIN.	
German Halter and coil Chain.....	dis 50% to 10%
Trace, Breast and Fancy.....	dis 60%
Oneida Halter Chain (old list).....	dis 45% to 10%
Galvanized Pump Chain.....	dis 60% to 10%
Jack Chain, Iron.....	dis 70%
Jack Chain, Brass.....	dis 60% to 10%
CHALK.	
White.....	gross 60c net
Red.....	gross 85c net
Blue.....	gross \$1.00 net
White Crayons.....	gross 9c net
COTTON LINES.	
Cotton Fish Lines.....	dis 33%
Cotton Chalk Lines, 30 feet:	
Nos. 11, 13, 15, 17, 20.....	dis 40%
3.20 3.60 4.00 4.50 5.25	
CHISELS.	
Socket Framing, Crossman.....	dis 65%
Socket Framing, P. S. & W.....	dis 70% to 10%
Socket Framing, Douglass.....	dis 75% to 10%
Socket Firmers, Crossman.....	dis 65%
Socket Firmers, Ohio Tool Co.....	dis 60% to 10%
Socket Firmers, Douglass.....	dis 75% to 10%
Socket Corner.....	dis 70% to 10%
Tanged Firmers.....	dis 40%
Tanged Firmers, Butcher's.....	\$5.00 to \$5.25
L. Merrill's Socket and Framing Chisel.....	dis 65%
CLAMPS.	
Iron, Screw, Eagle.....	dis 50%
Iron, Adjustable, Stearns.....	dis 20% to 10%
Iron, Cabinet, Sargent's.....	dis 65% to 10%
Iron, Carriage maker's, Carr & Crawley.....	dis 25%
CLIPS, AXLE.	
Norway or Best.....	dis 60%
Superior.....	dis 45% to 10%
Conestogo.....	dis 60% to 10%
Coal Hods—Griffiths.....	dis 40%
COCKS, BRASS.	
Racking, new list, July 10, 1880.....	dis 60% to 10% to 10%
Globe, new list, July 10, 1880.....	dis 60% to 10% to 10%
Plain Bibbs, new list, July 10, 1880.....	dis 60% to 10% to 10%
Ale and Beer, new list, July 10, 1880.....	dis 60% to 10% to 10%
COFFEE MILLS.	
Parker's.....	dis 45%
Wilson's.....	dis 40% to 10%
Logan & Strobridge.....	dis 45%
Enterprise Mfg. Co.....	dis 25%
COMPASSES, DIVIDERS, AC.	
Compasses.....	dis 60% to 10% to 10%
Calipers.....	dis 60% to 10% to 10%
Dividers.....	dis 60% to 10% to 10%
Cook's Pencil.....	dis 25%



Door Mineral....	Same discounts as Door Locks.
Door Por. Jap'd....	
Door Por. Plated....	
Door Por. Plain....	75c gross inch, dis 10
Furniture, Wood Screws....	dis 10
Picture....	dis 10
Hemacite, Picture....	dis 35
Shutter, Porcelain....	dis 50 10
Melting & Skim'ng, Monroe's Pat. #1....	dis 40
Melting, C. & C....	dis 40 10
Acme Buckeye, Easy & Excelsior, new list, dis 40 10	
Linen Fish....	dis 25 10
Wire Clothes, Galvanized, 100 feet....	dis 30 10
LOCKS AND LATCHES.	
Cabinet, Eagle....	Changes made in list price
Cabinet, Gaylord....	of some numbers Jan. 1,
Cabinet, Bridgeport....	1881, dis 25 10
Cabinet, P. & F. Corbin....	dis 40
Trunk, new list, Jan. 1, 1881....	dis 15 10
Yale Lock Co., Flat Key....	dis 40
Plate....	dis 33 10
DOOR LOCKS, ETC.	
Bradford....	
Norwalk....	
Norwich....	
P. & F. Corbin....	List prices as revised
Russell & Erwin....	Dec. 10th, 60c for
Mallory, Wheeler & Co....	cash.
Nimick & Brittan Mfg. Co....	dis 50 10
Padlocks—Russell & Erwin....	
Mallory, Wheeler & Co....	dis 70
Norwich Lock Manf. Co....	and 5c for cash.
Wm. Wilcox & Co....	
Nimick & Brittan Mfg. Co....	dis 33 10
Yale Lock Manf. Co.'s "Standard"....	dis 40
Romer's....	dis 80 10
Conestoga....	dis 80 10
Scandinavian, "Norwich"....	dis 50 10
Nimick & Brittan's Burglar-Proof Locks....	dis 50 10
MALLETS.	
Penfield Block Co., Apple, Hickory and	
Lignum vitae....	dis 30
MEAT CUTTERS.	
Dixon's (P. S. & W.) Nos. 1 2 3 4....	dis 35
Perry's, Nos. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100....	dis 35
Woodruff's (P. S. & W.) Nos. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100....	dis 35
Hales' Nos. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100....	dis 35
Kieser's No. 55....	dis 40
Kieser's Gem....	dis 40
Kieser's No. 82....	dis 40
Kieser's Monarch....	dis 40
Beef Shaver, (Enterprise Manf. Co.)....	dis 25
MOLASSES GATES.	
Stebbins Patterns....	dis 70 10
Stebbins Genuine....	dis 67 10
Stebbins Tinned Ends....	dis 40 10
Chase's Hard Metal....	dis 50 10
Self-Measuring, (Enterprise)....	dis 20
Lincoln's Pattern....	dis 60 10
Weed's....	dis 15
Boss Nos. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100....	dis 35
Boss, Japanned Finish....	dis 60 10
Boss, Bronze Finish....	dis 50 10
Square Nuts....	8 c off list.
Hexagon Nuts....	8 1/2 c off list.
Washers....	7 1/2 c off list.
OILERS.	
Zinc and Tin....	dis 60 10
Brass and Copper....	dis 50
Malleable (Hammer's)....	dis 50
PINKING IRONS.	
Per dozen....	75 cts. net
PLATING MACHINES.	
Astor Plating Machine....	each \$15, dis 20
Crown Plating Machine....	dis 25
PLANES AND PLANE IRONS.	
Bench, First Quality....	dis 20
Bench, Second Quality....	dis 25
Molding....	dis 15
Bailey's (Stanley R. & L. Co.) New list, Jan. 1879....	dis 20 10
The Stanley (S. R. & L. Co.) new list, January 1879....	dis 20 10
Bailey's....	dis 20 10
Plane Irons, Rutter's....	dis 50 10
Plane Irons, Auburn Tool Co....	dis 20
Plane Iron, Ohio Tool Co....	dis 20
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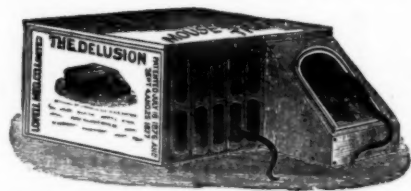
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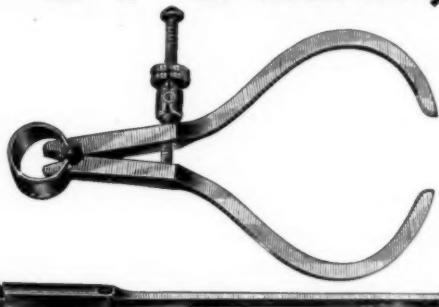
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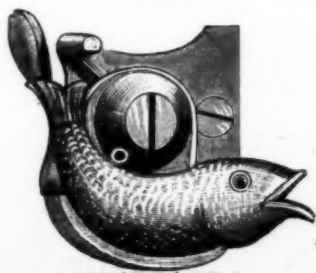


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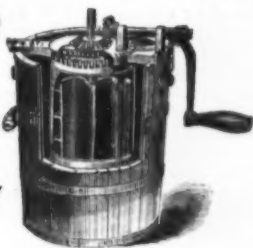
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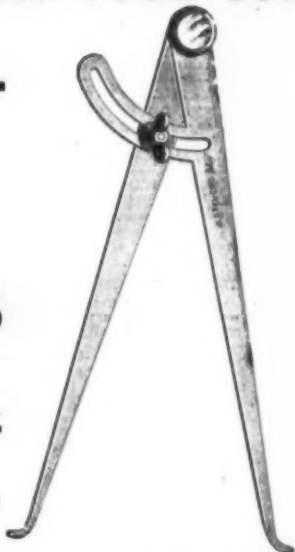
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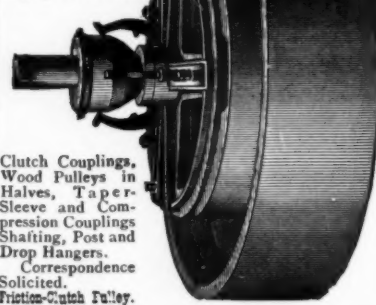
The Holyoke Machine Company, of Worcester, Massachusetts, advertise in this issue their well-known Hercules Water Wheel. This wheel has many points of merit that strongly commend it to the attention of those who use water power. The most thorough tests have demonstrated its many good qualities. In Holyoke it is the standard water wheel, the aggregate horse power of the Hercules wheels in operation there being greater than that of all other wheels combined. These wheels are very popular in the South as well as in the North, having been in use for many years in a large number of Southern mills. There are four of the Hercules wheels now in operation in the big cotton mills of the Eagle & Phenix Manufacturing Co., Columbus, Ga., and Mr. John Hill, of that company, in writing, Feb. 25, 1885, to the Holyoke Machine Co., said: "Within the past four years I have ordered four 'Hercules' wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a 'Hercules' wheel has been added each time a new wheel was wanted. In the Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The 'Hercules' is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon."

That is a pretty strong letter, but it is only a sample of letters received by the manufacturers of this wheel. Among the recent shipment of wheels have been two—one a 54-inch and one of 60-inch—to a Georgia cotton mill. Two Hercules wheels are being put in at Natick Cotton Mill, and one at the Arctic Mill of B. B. & R. Knight near Providence. This will make eleven wheels furnished to this well-known firm, one of the most prominent in the manufacturing line in New England. Hercules wheels are sold in England, Ireland and Scotland, and on the Continent, a cable order having been received only a few days ago for one to go to France. The manufacturers say: "The Hercules gives the most power for its size and the highest average percentage from full to one-half gate of any wheel ever made." Their advice to all users of water wheels is to "get the best at first." If you are interested in water wheels, if you want a new wheel or a larger wheel, or a better wheel than you are using, write to the Holyoke Machine Co., Worcester, Mass., for catalogue No. 3.

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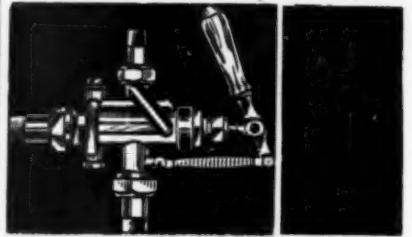
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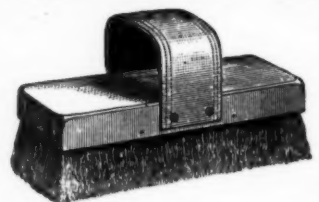
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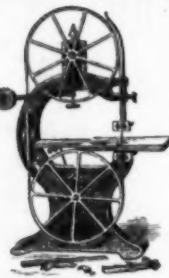
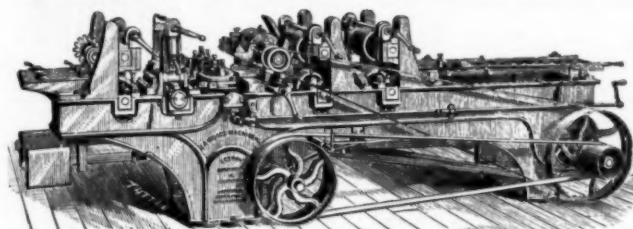
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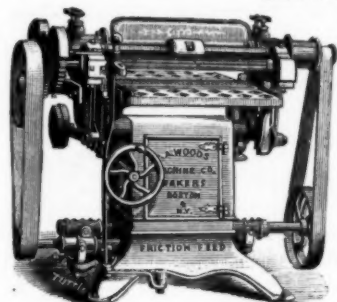
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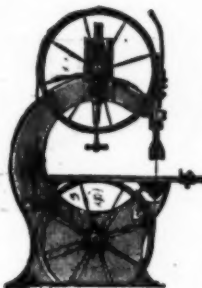
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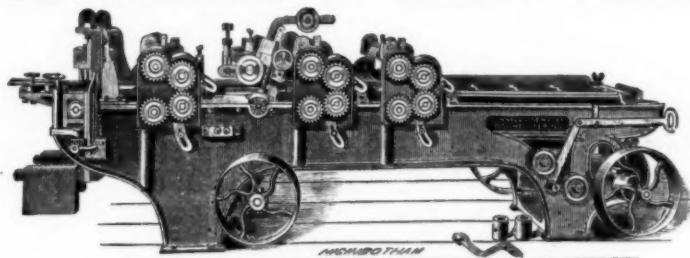


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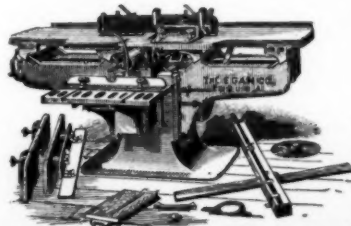
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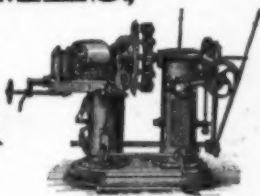
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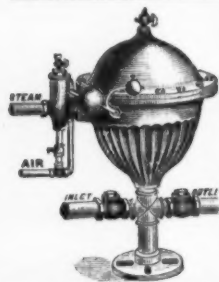
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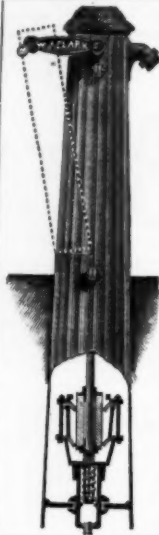
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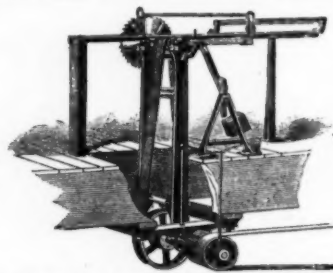
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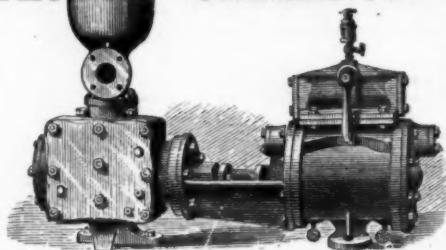
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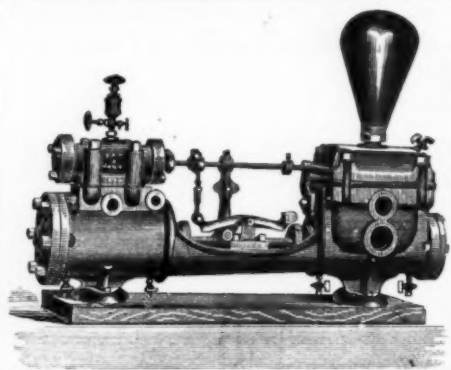
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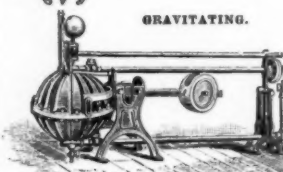
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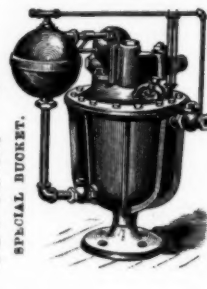
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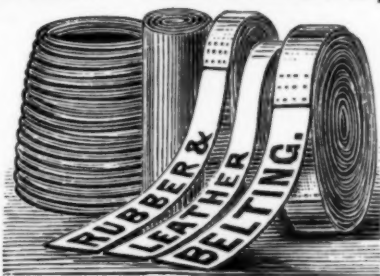
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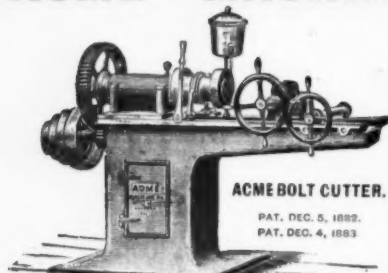
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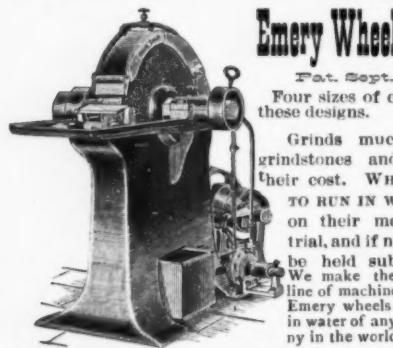


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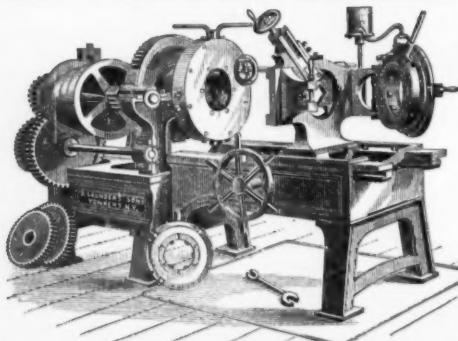
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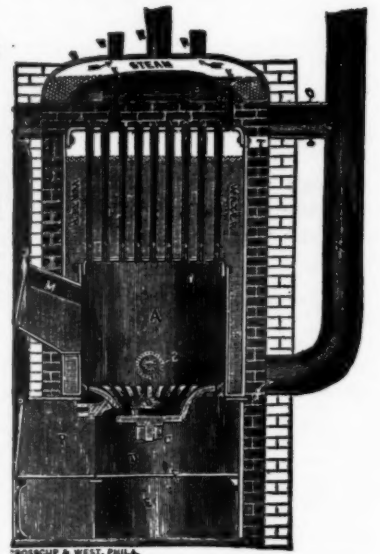
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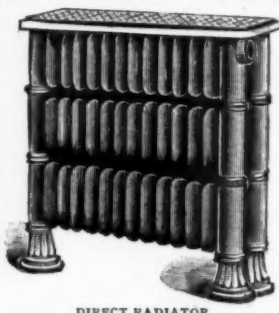
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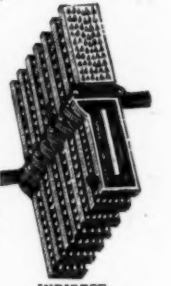
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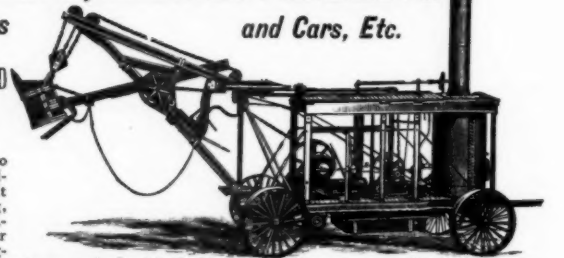
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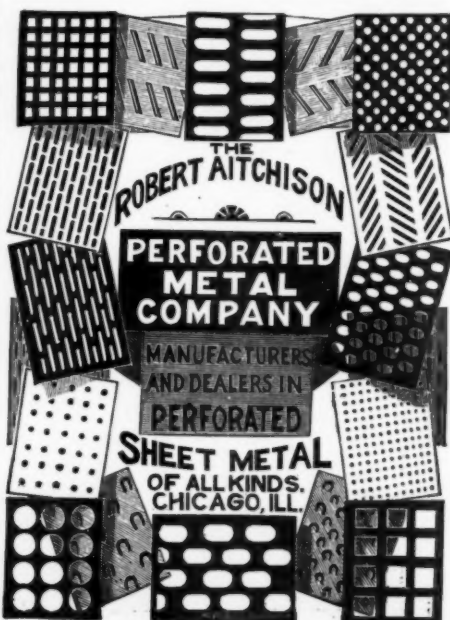
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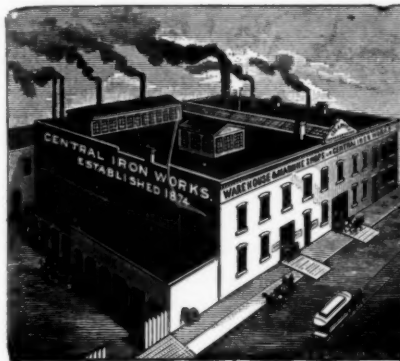
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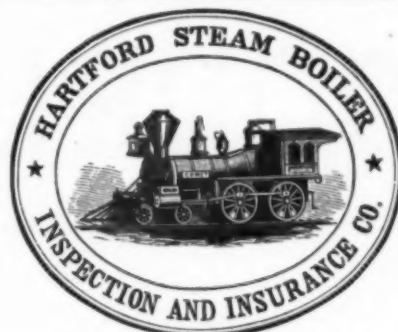
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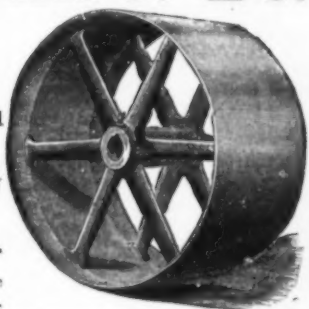
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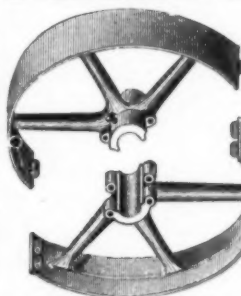
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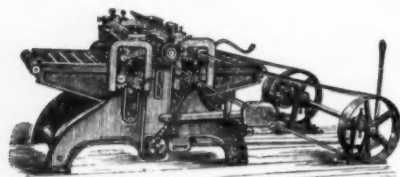
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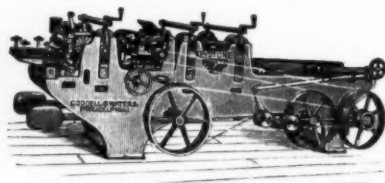
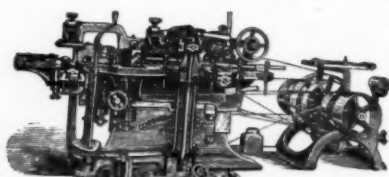
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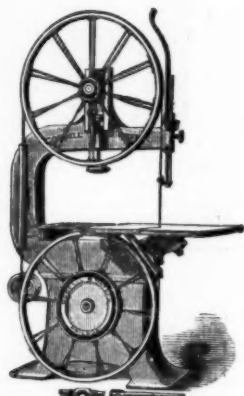
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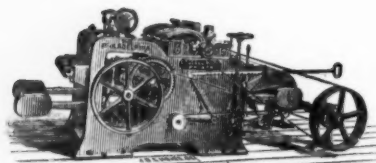
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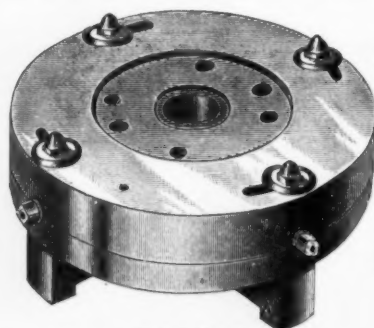


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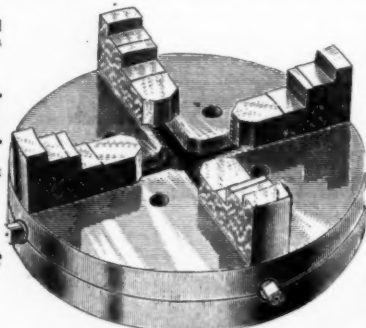
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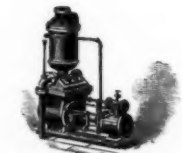
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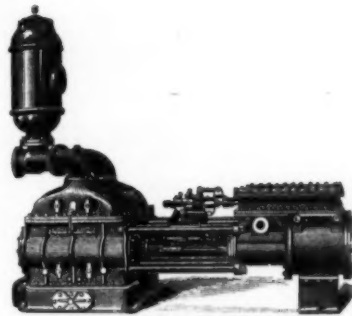
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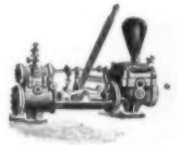
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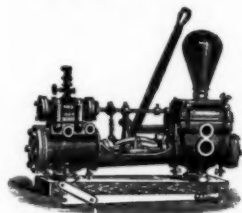
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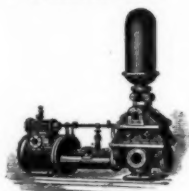
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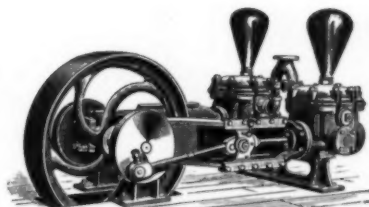
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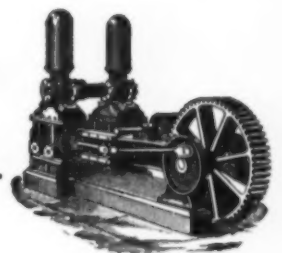
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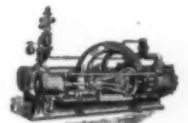
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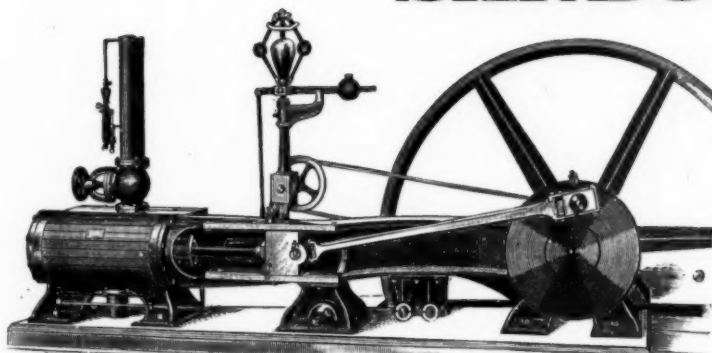
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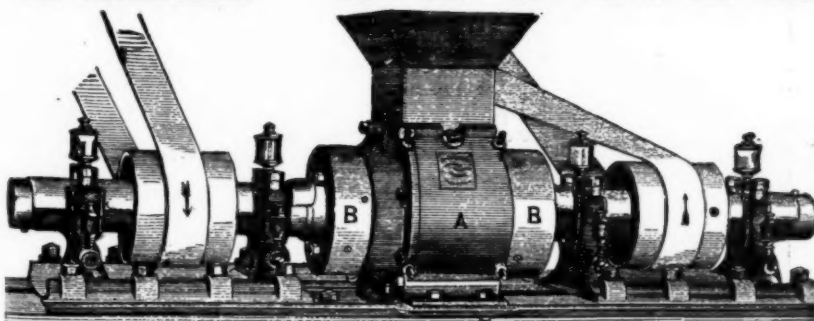
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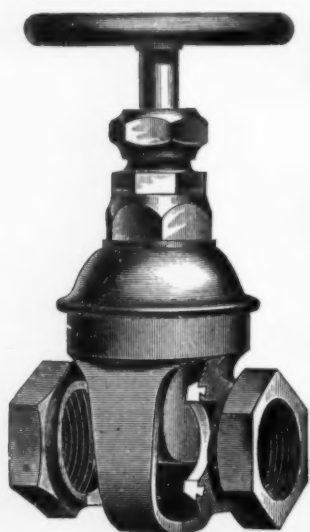
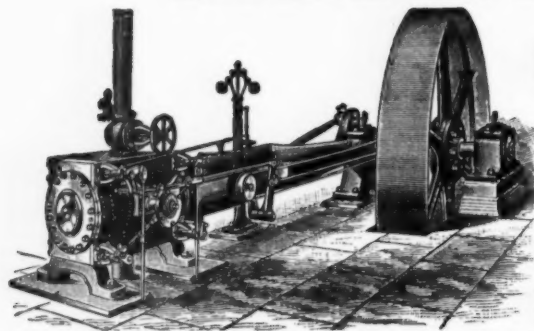
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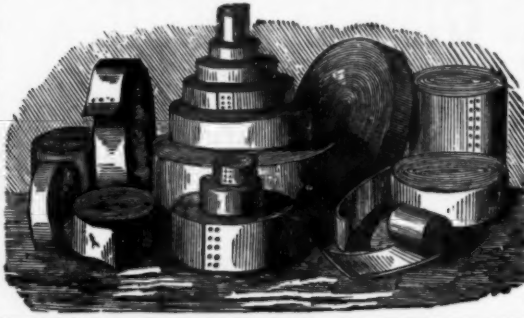
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[From The Inland Architect and Builder, November, 1885.]

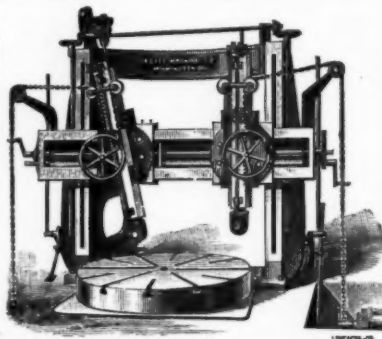
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